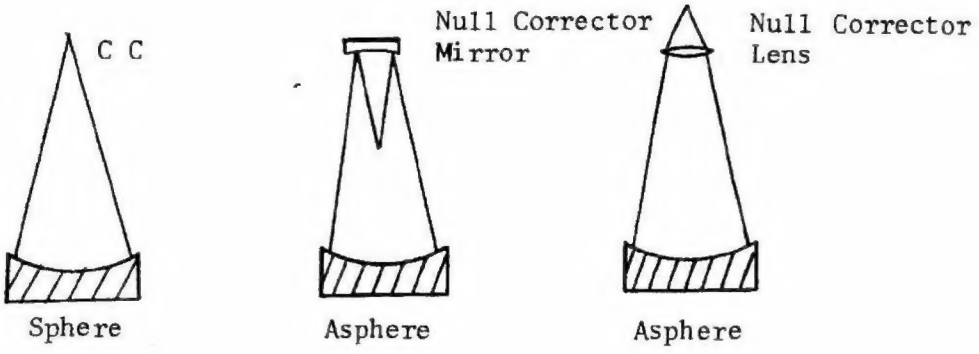
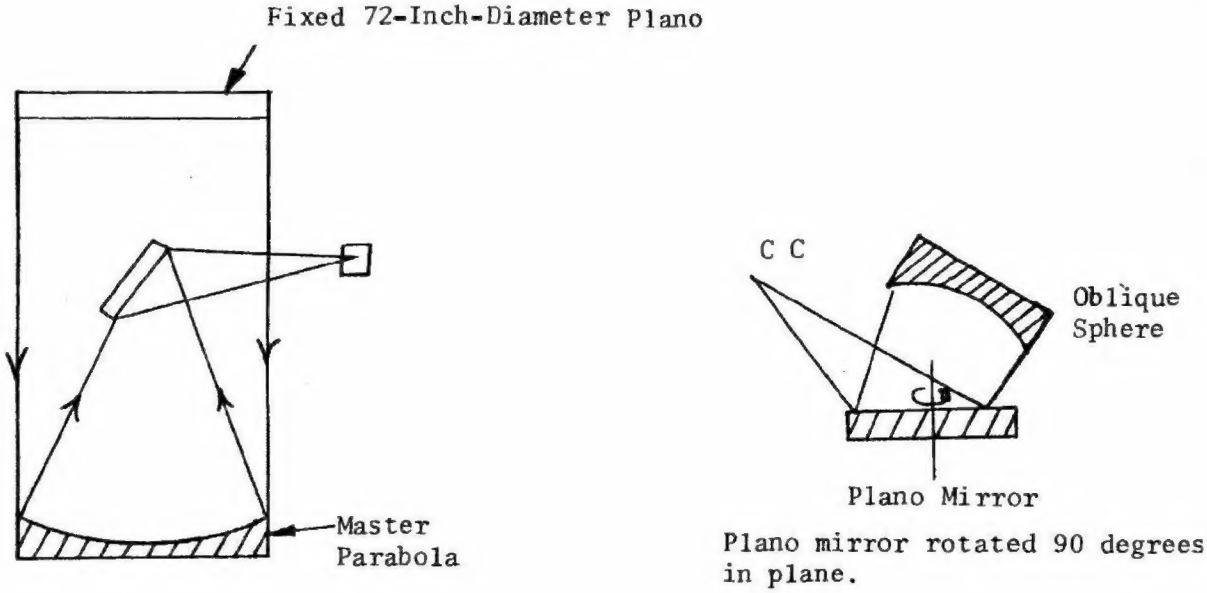
NRO APPROVED FOR RELEASE 10 JUNE 2014



(a) Optical Test Configurations for Mirrors with Power



(b) Plano-Mirror Test Configurations

Figure 6.1-1. Mirror Test Configurations

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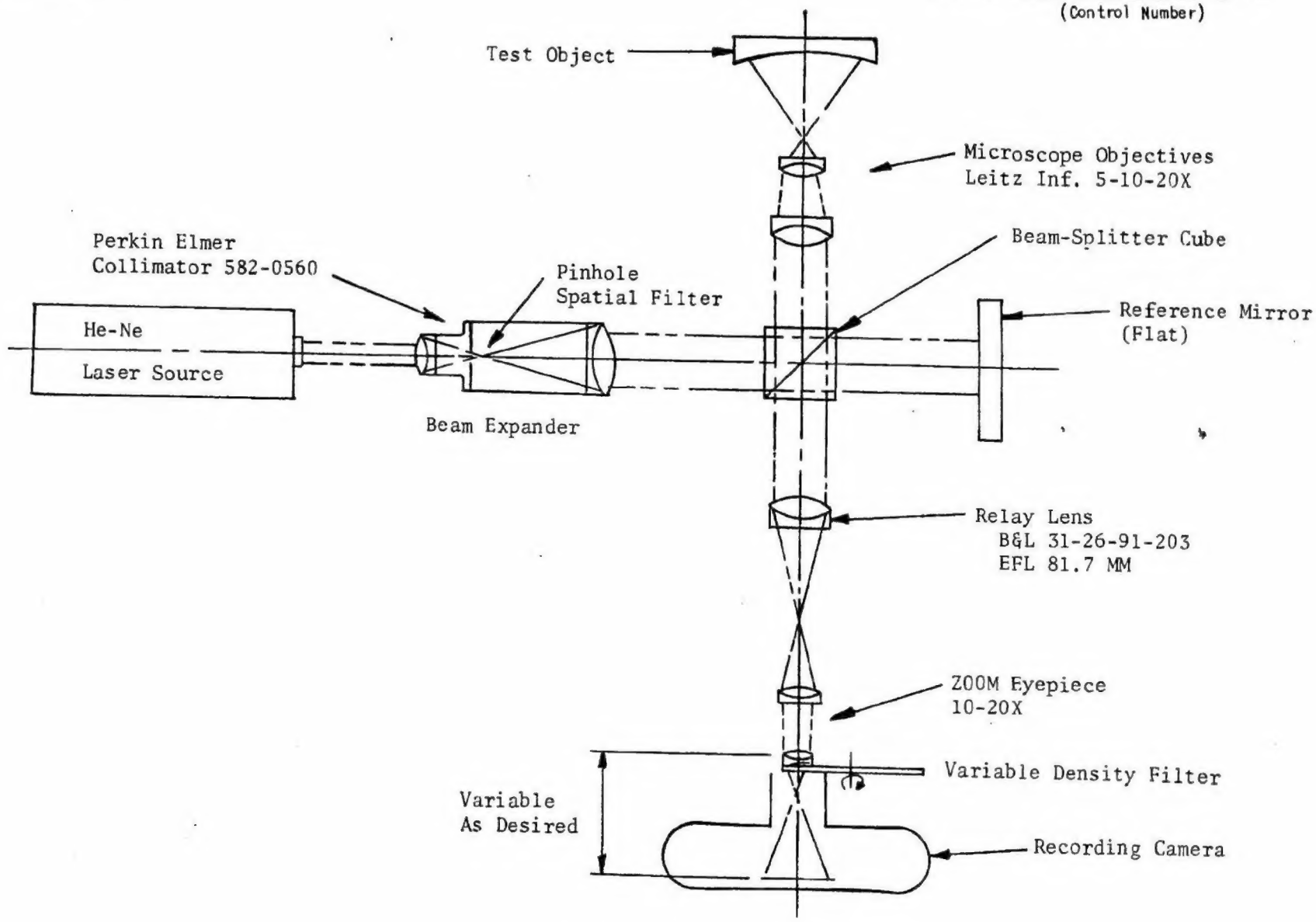

Figure 6.2-2. MOD II Twyman-Green Interferometer Schematic

Handle via BYEMAN
Control System Only

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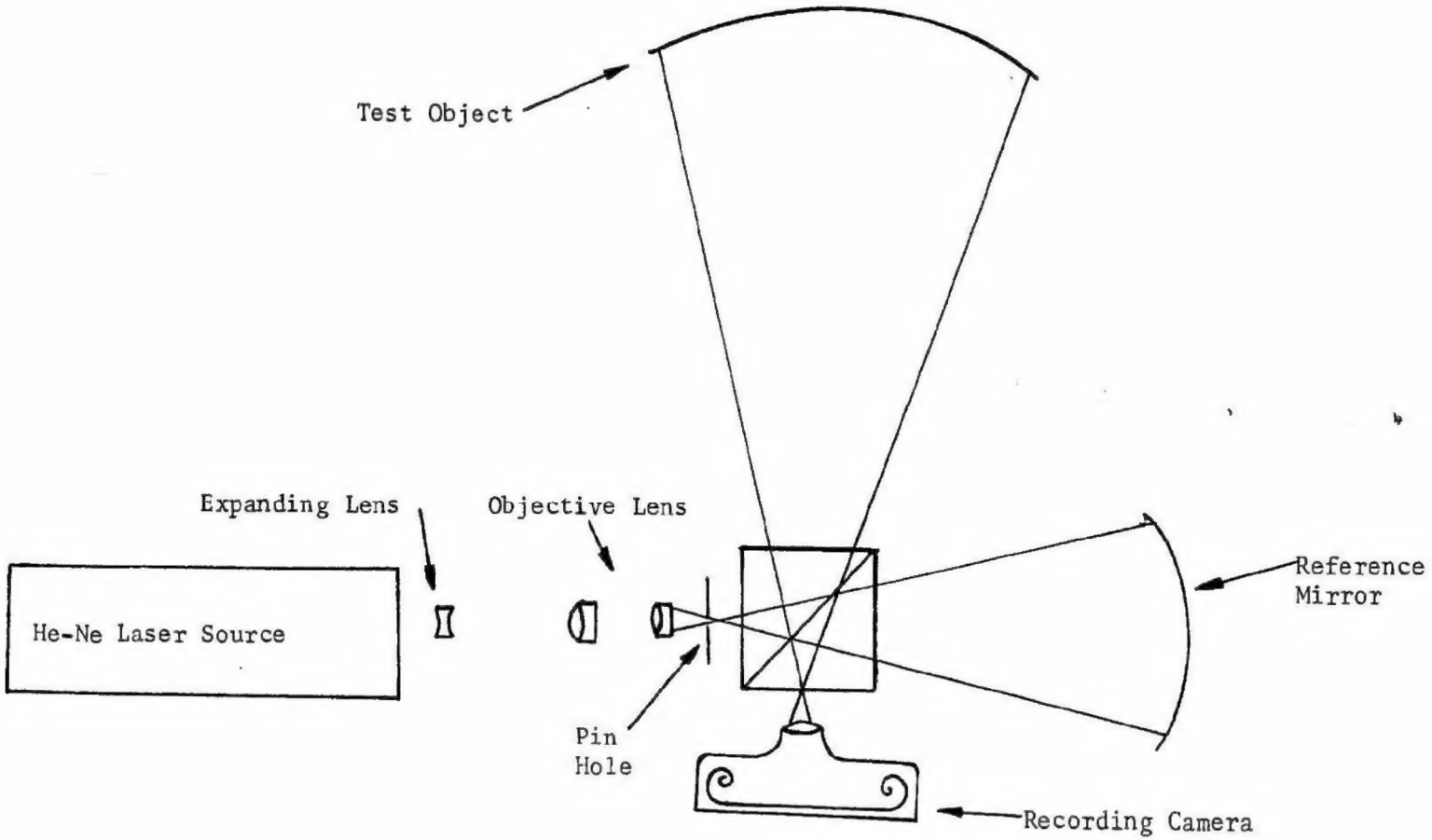

Figure 6.2-4. Williams Interferometer Schematic

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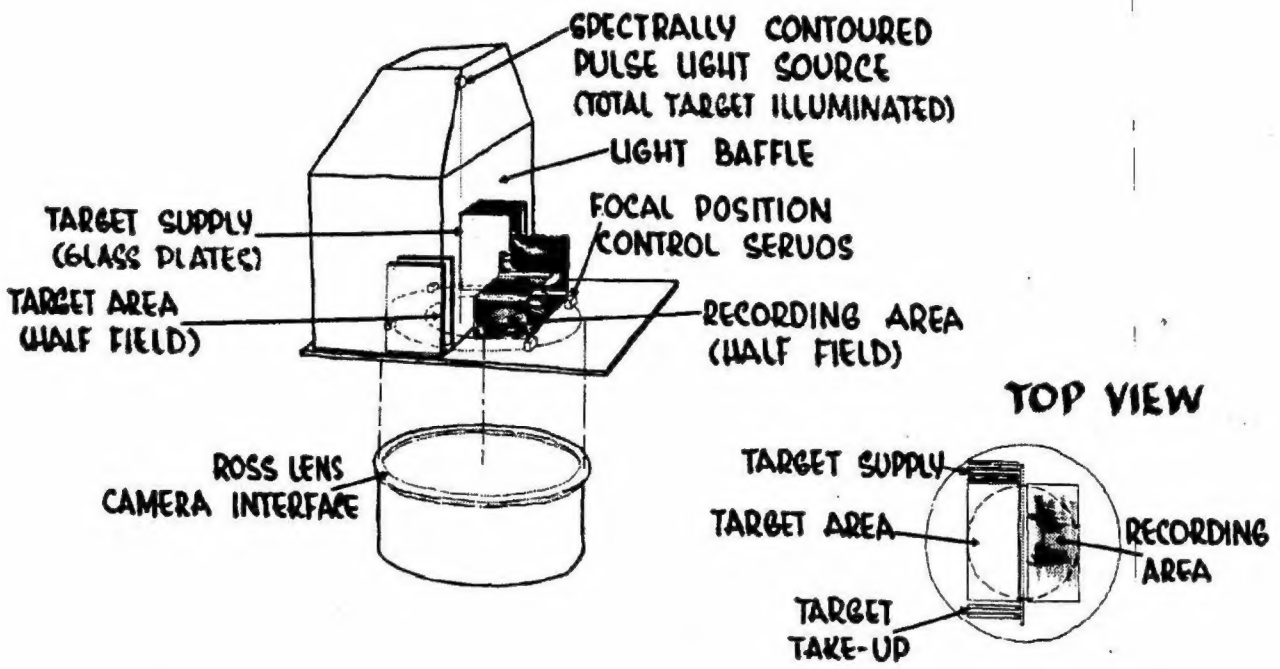

Figure 6.2-6. Photographic Test Equipment

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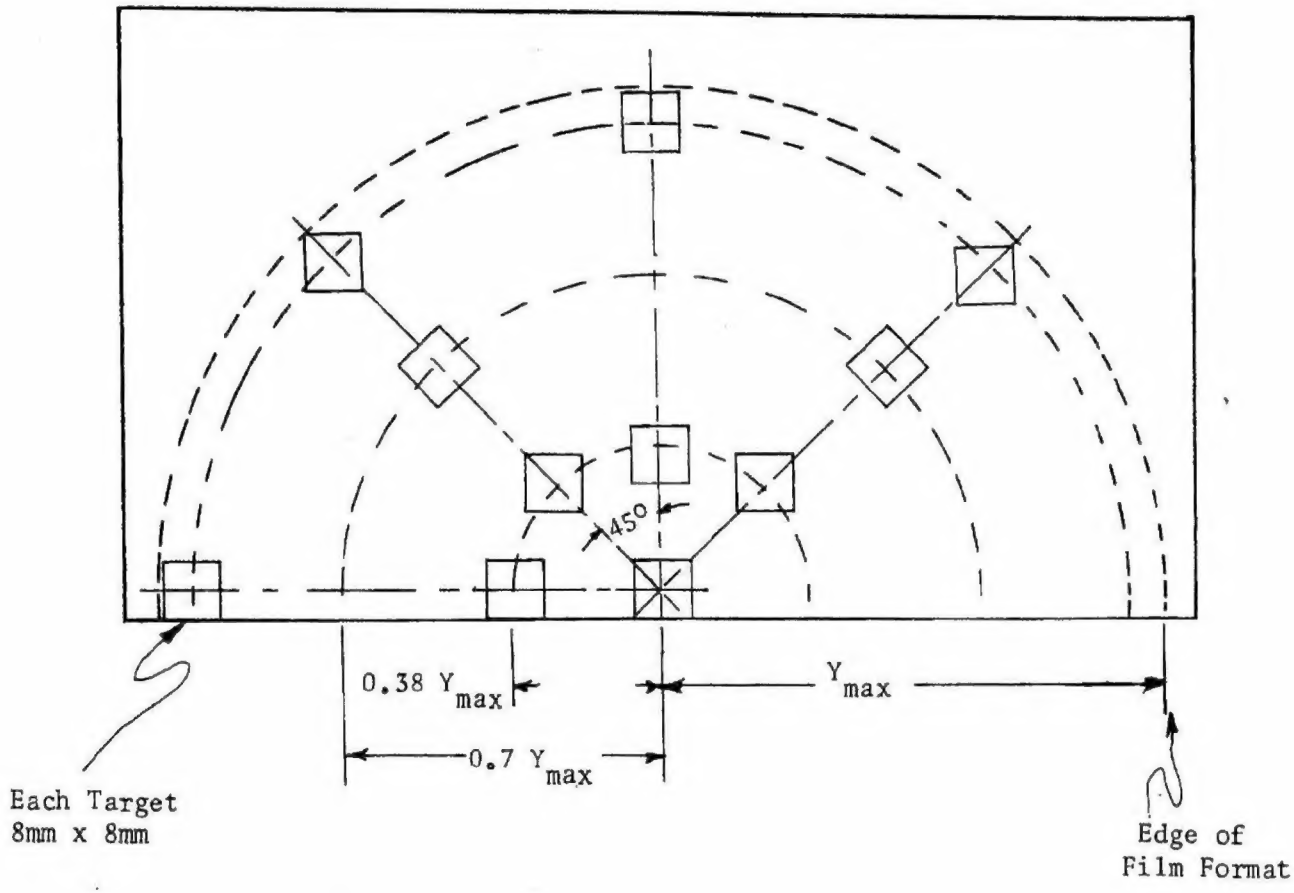

Figure 6.2-7. Photographic Target Format

Handle via BYEMAN
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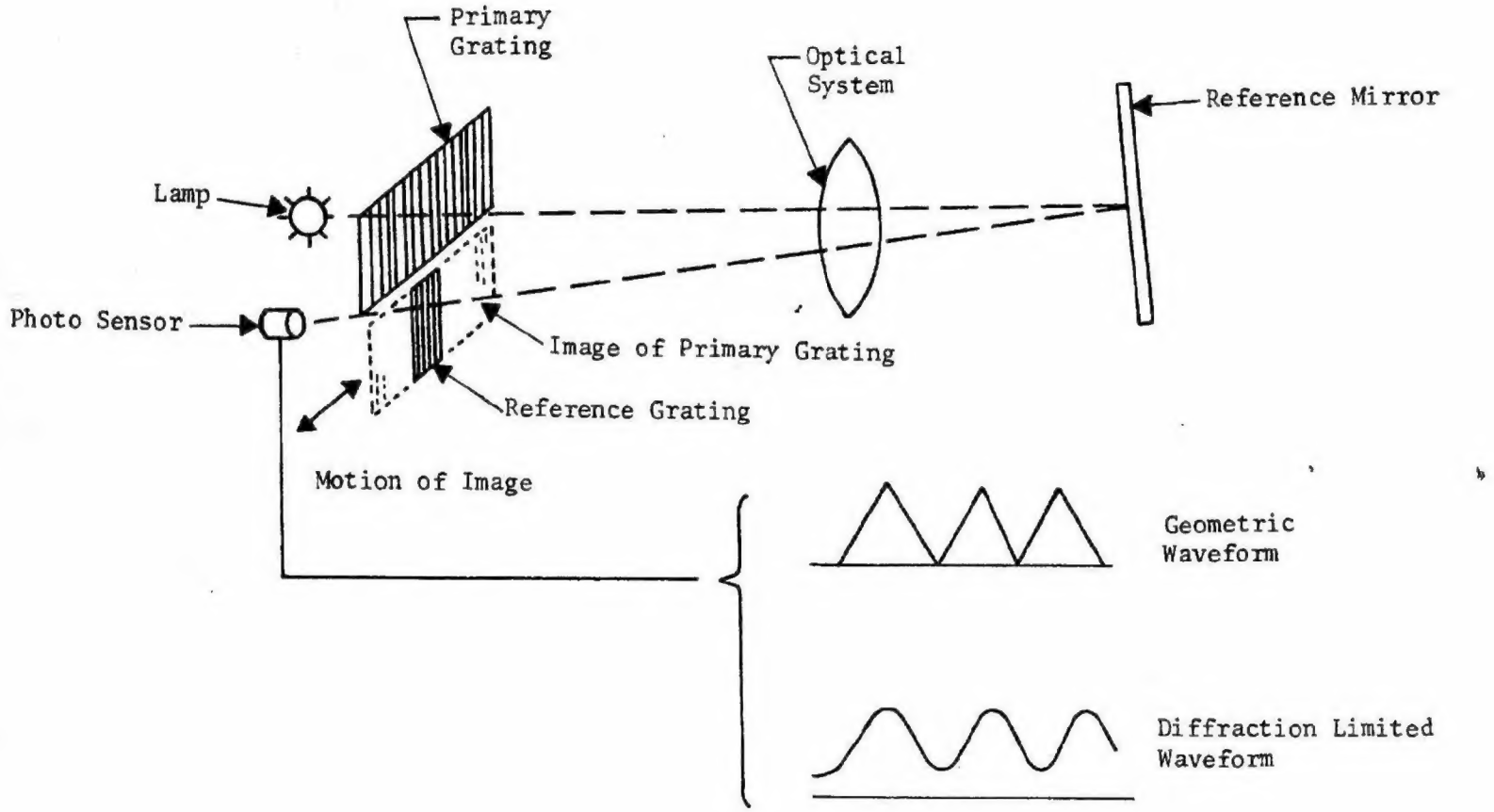

Figure 6.2-8. Optical Measurement of Image Smear.

Handle via BYEMAN
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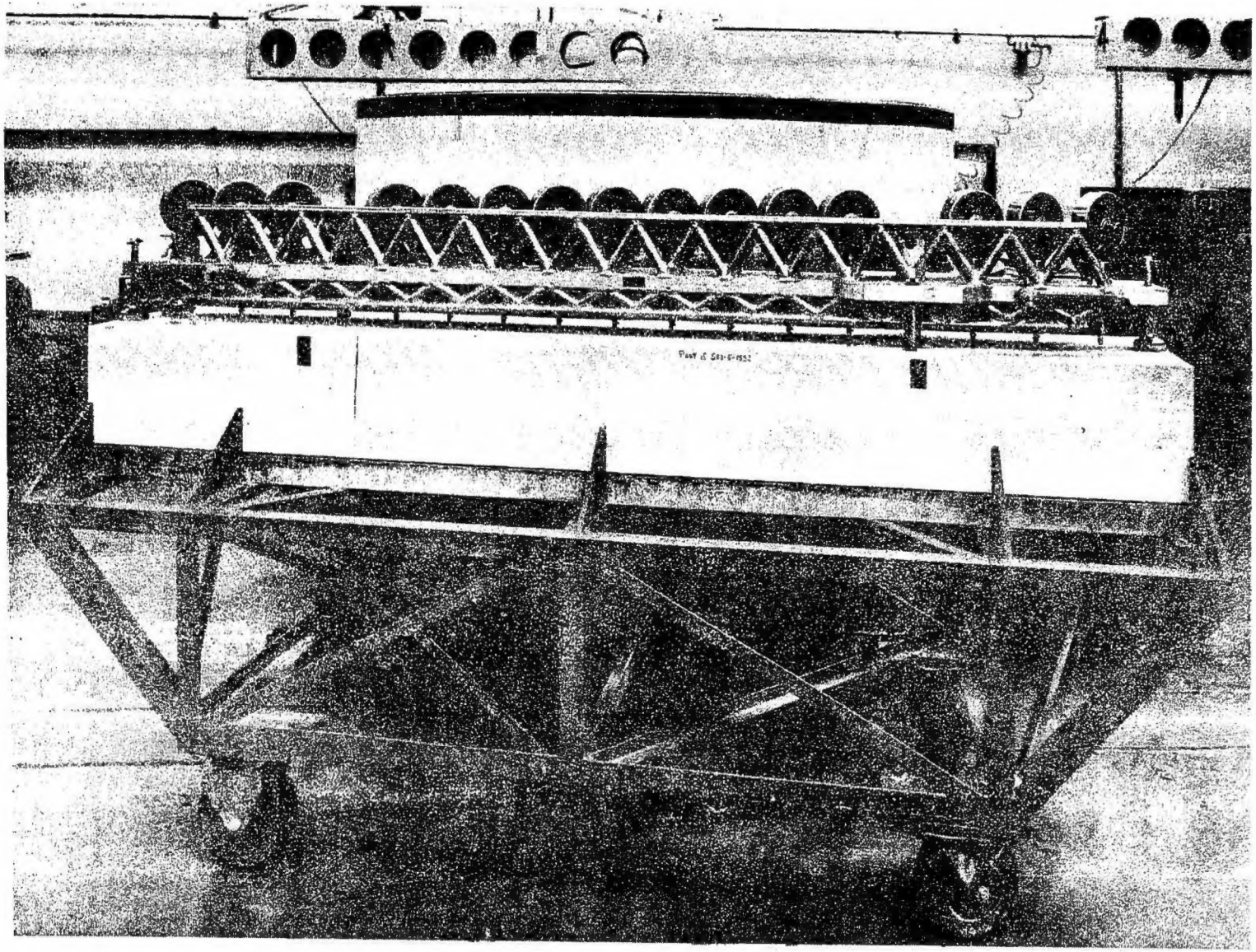

Figure 6.2-15. Profiling Spherometer on Pyroceram Master

Handle via BYEMAN
Control System Only

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BIF-008- F-035081-RH -68
(Control Number)

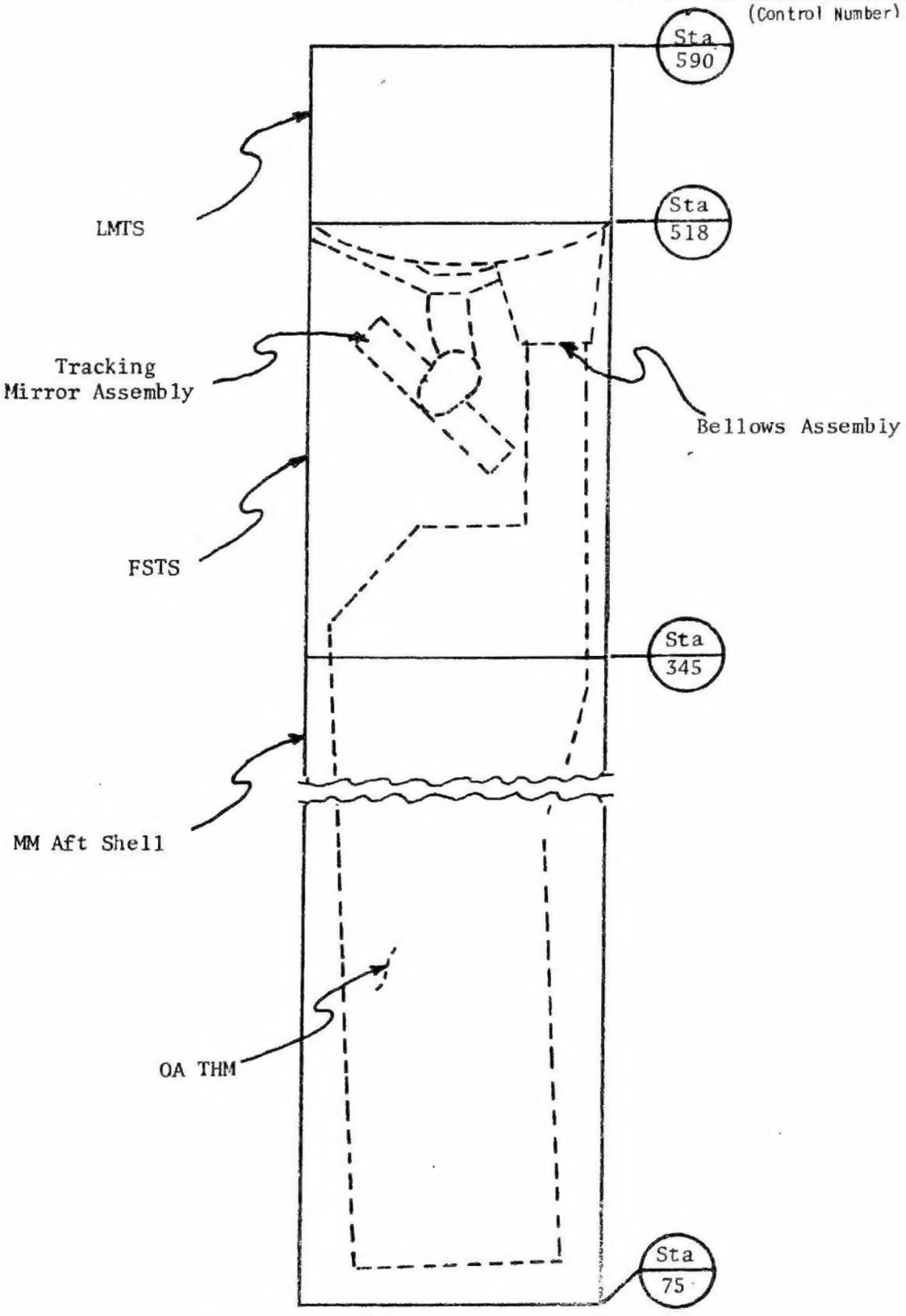

Figure 6.3-1. MMTHM Assembly Schematic

Handle via BYEMAN
Control System Only

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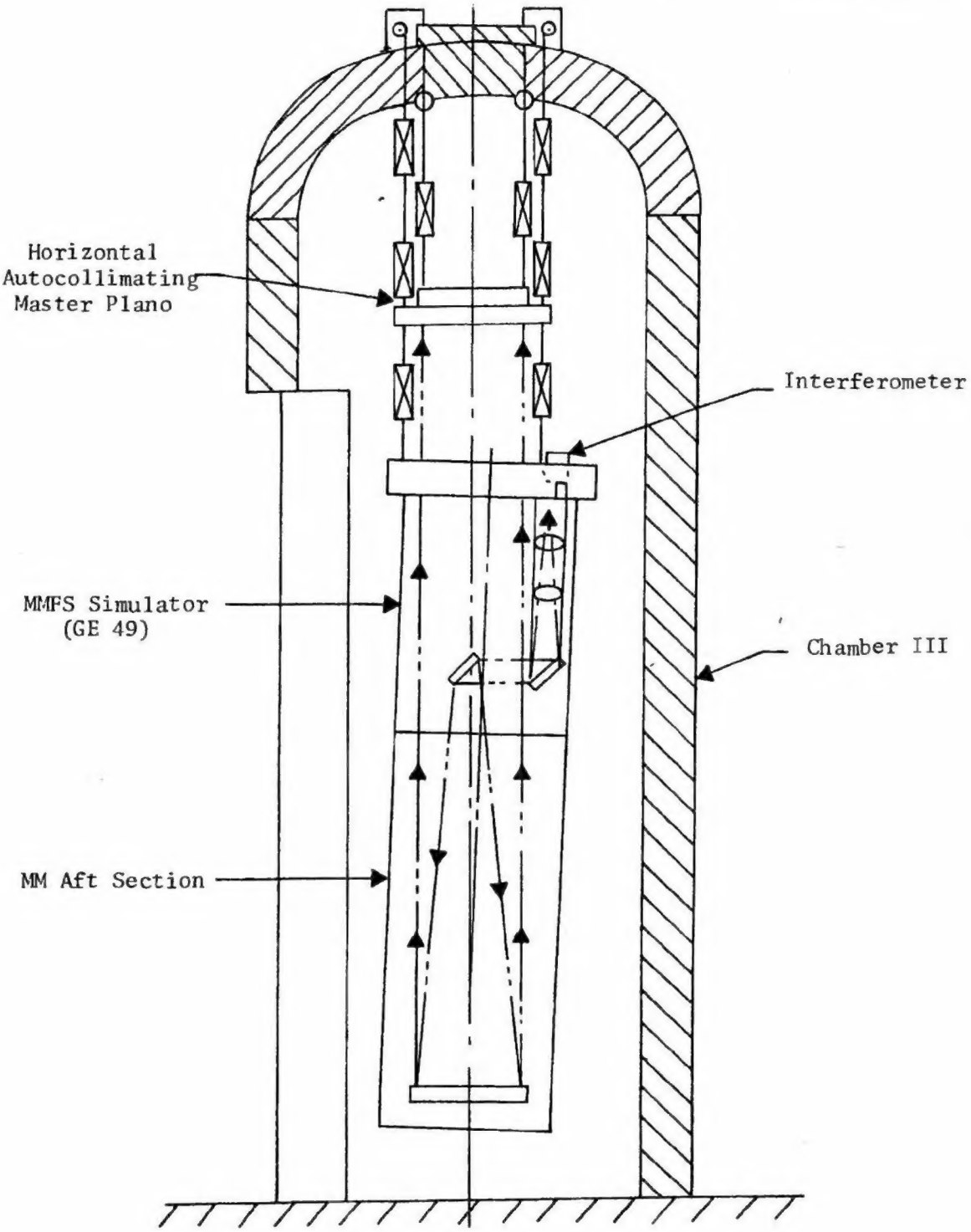

Figure 6.4-1. Mission Module Aft Section Isothermal Optical Quality Test Configuration in Chamber III

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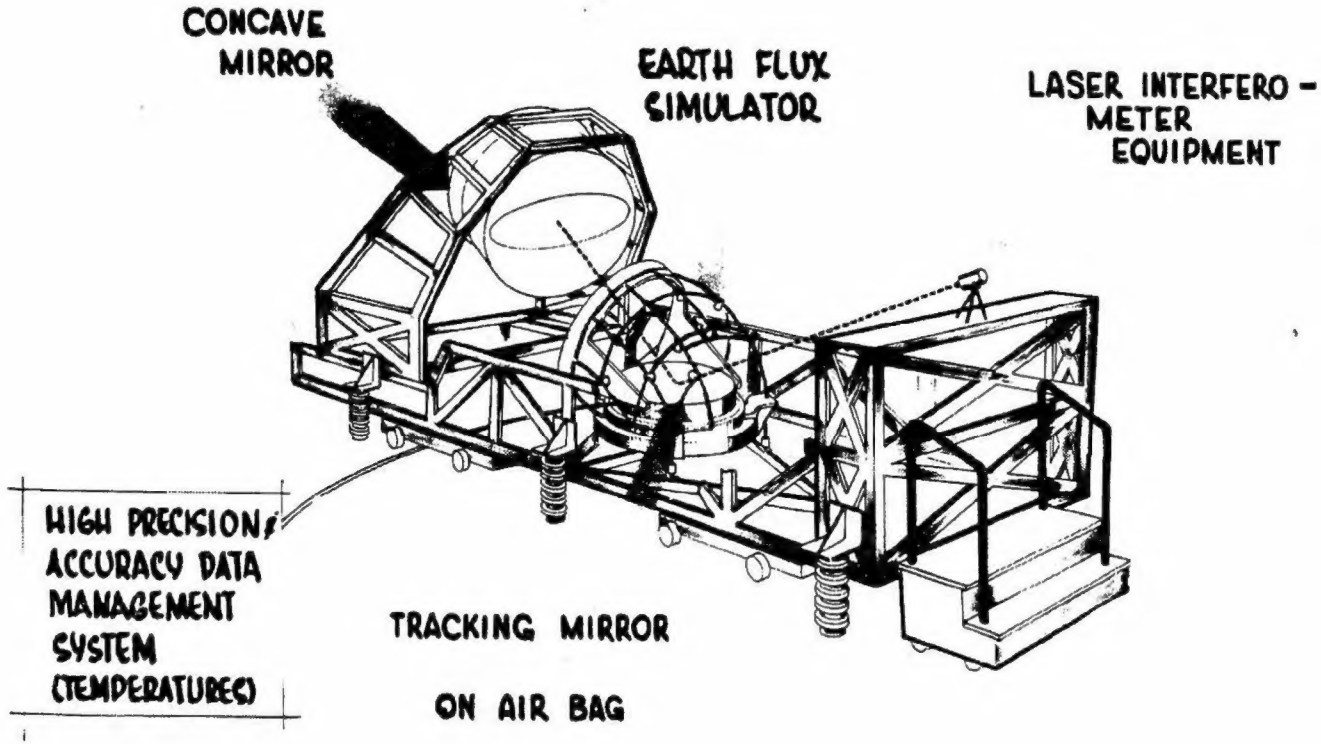

Figure 6.4-2. Tracking Mirror Thermo-Optical Tests

Handle via BYEMAN
Control System Only

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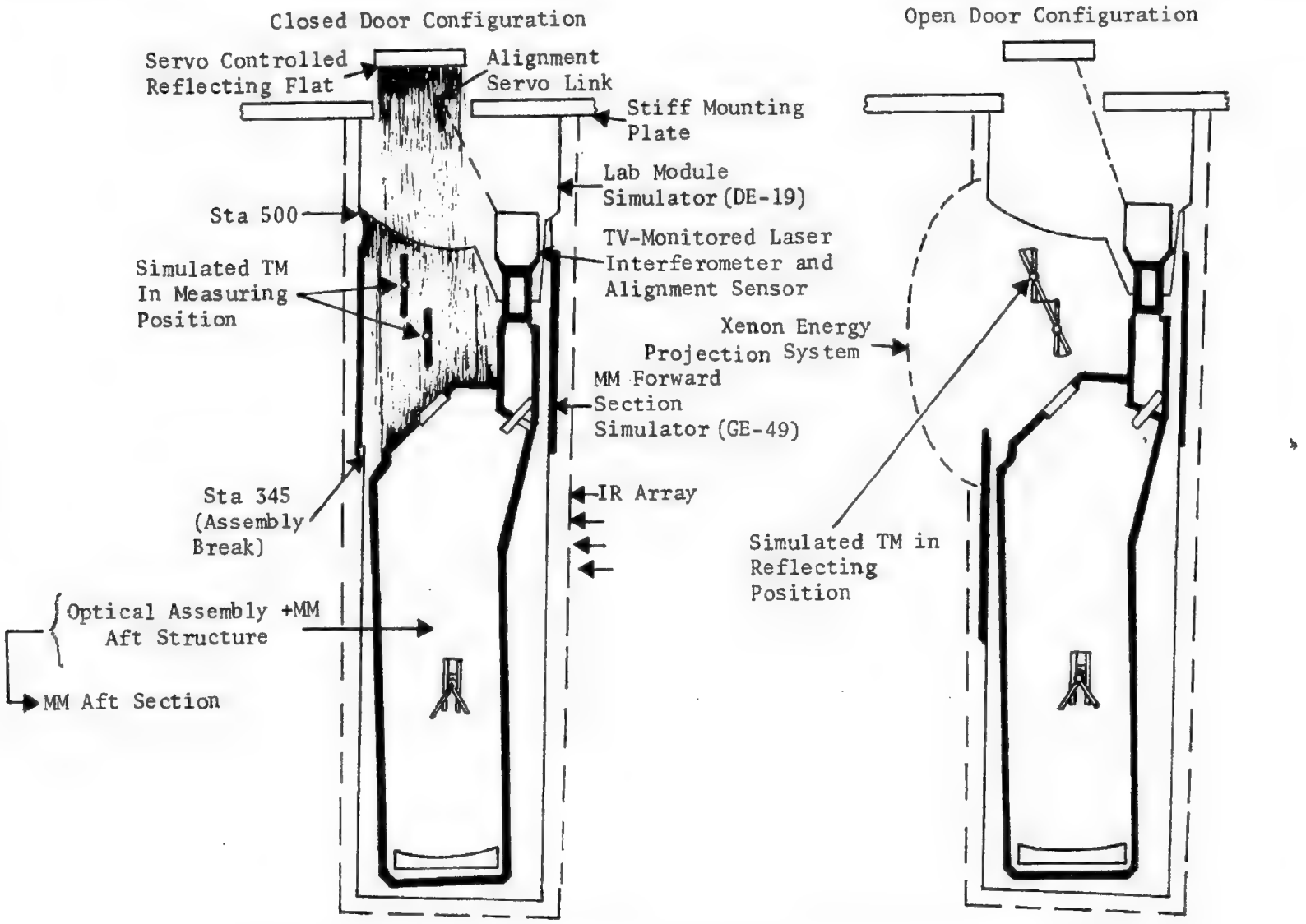

Figure 6.4-3. MMAS Thermal/Optical Test Configuration Chamber A

6-68

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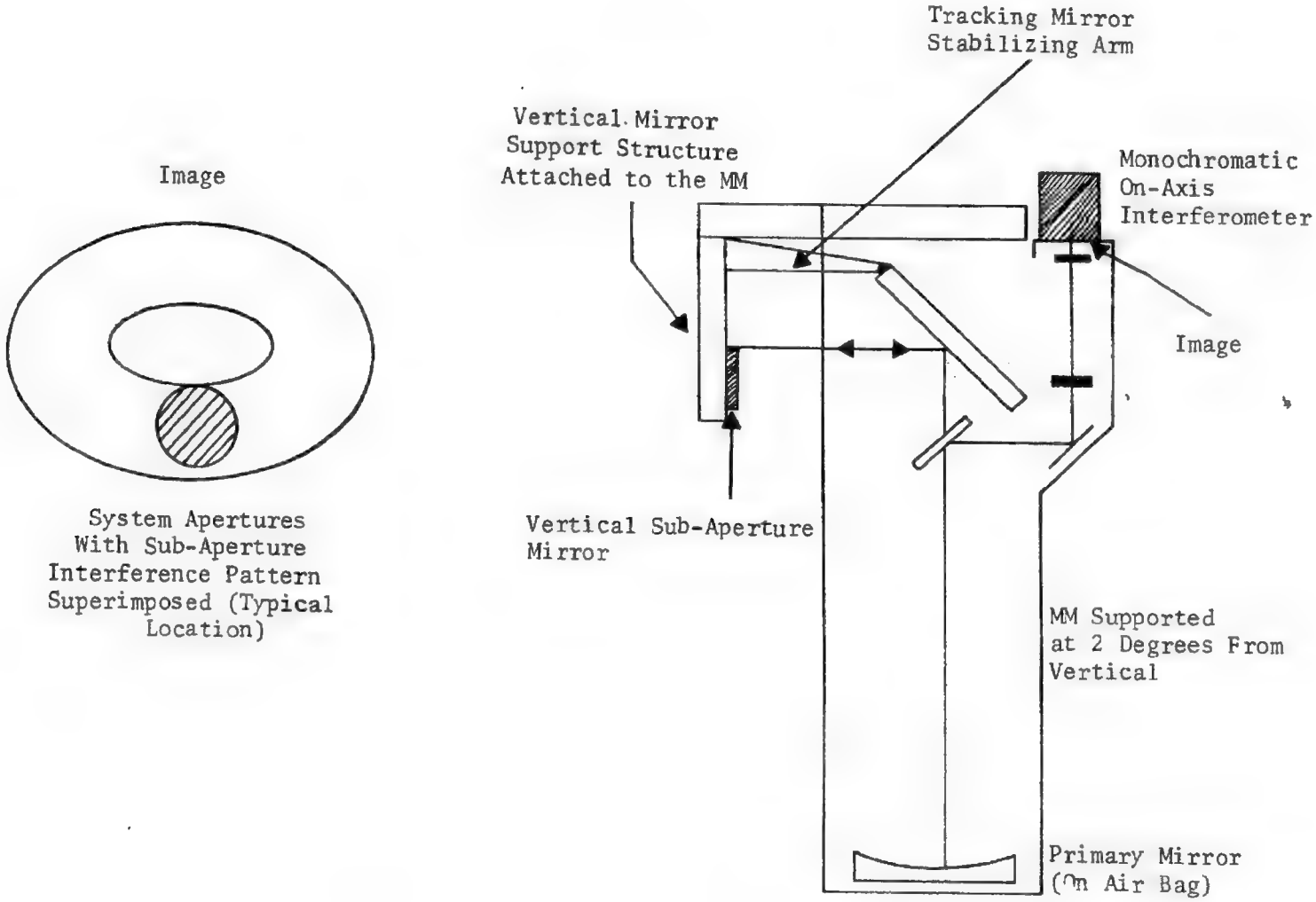

Figure 6.4-4. Sub-Aperture Optical Test Configuration

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Control System Only

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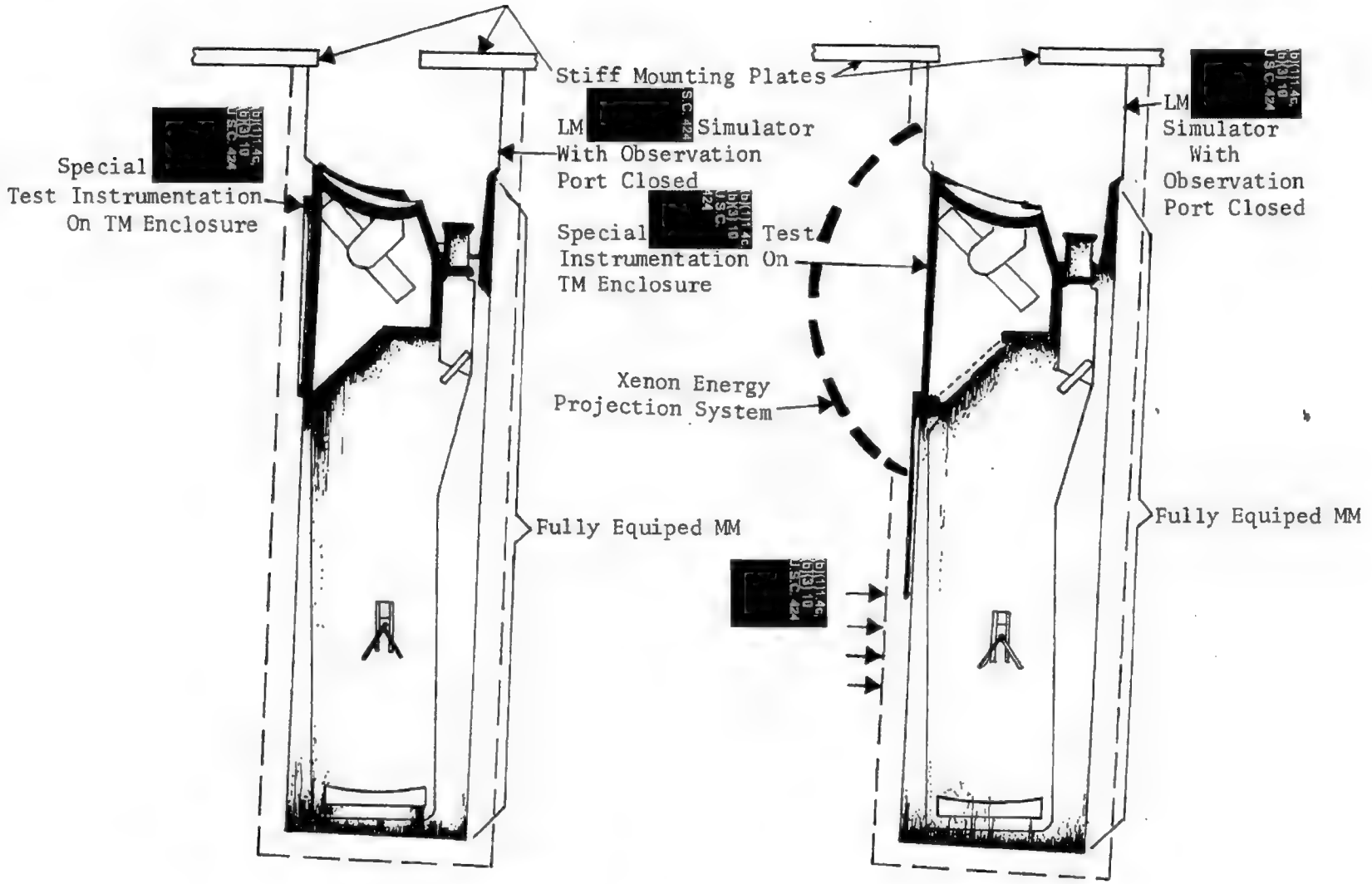
Stiff Mounting Plates
LM Simulator With Observation Port Closed
Special Test Instrumentation On TM Enclosure
Xenon Energy Projection System
Fully Equiped MM
LM Simulator With Observation Port Closed
Special Test Instrumentation On TM Enclosure
Fully Equiped MM

Figure 6.4-5. MM [redacted] Vacuum Test Configuration in Chamber A

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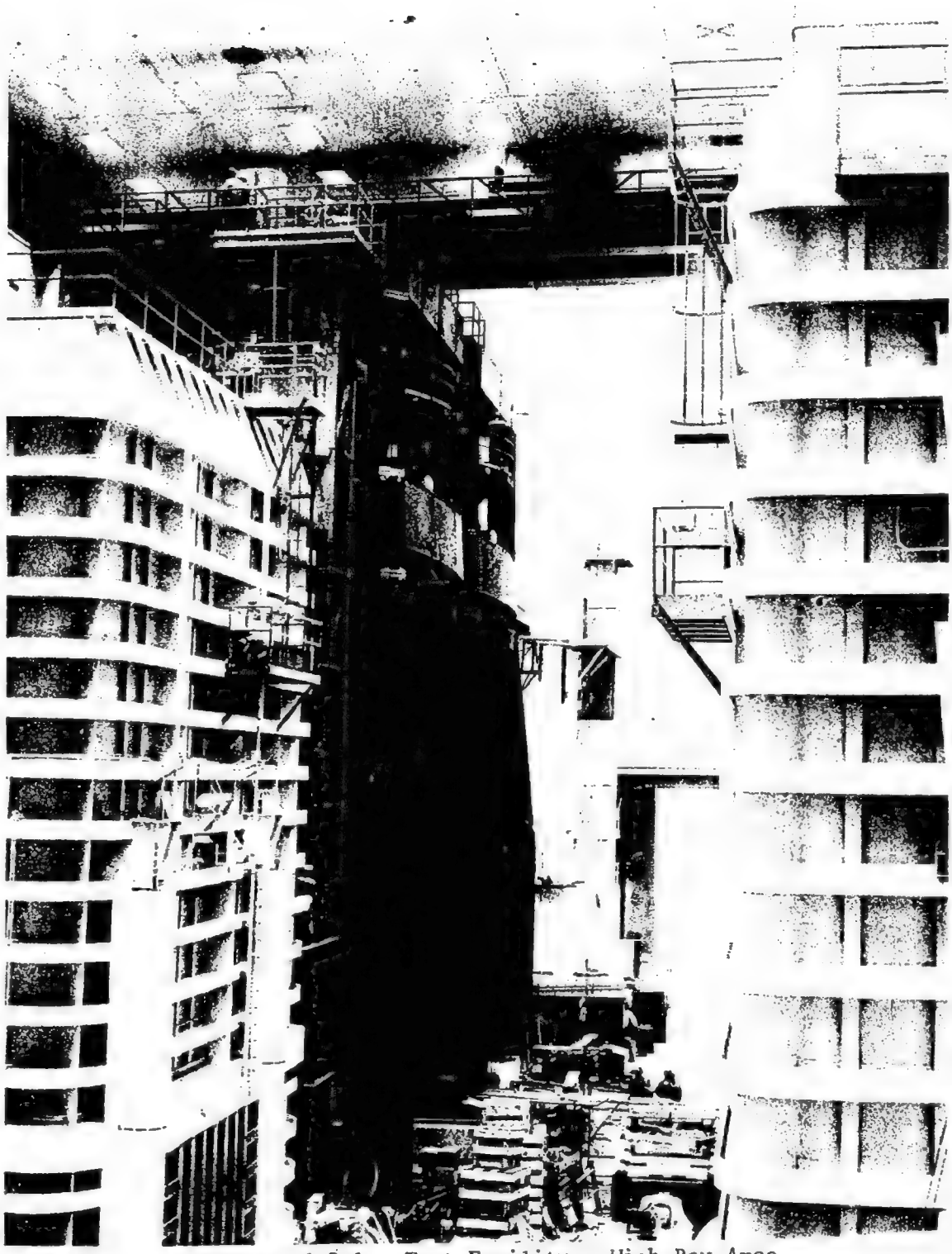

Figure 6.5-1. Test Facility - High Bay Area

Handle via BYEMAN
Control System Only

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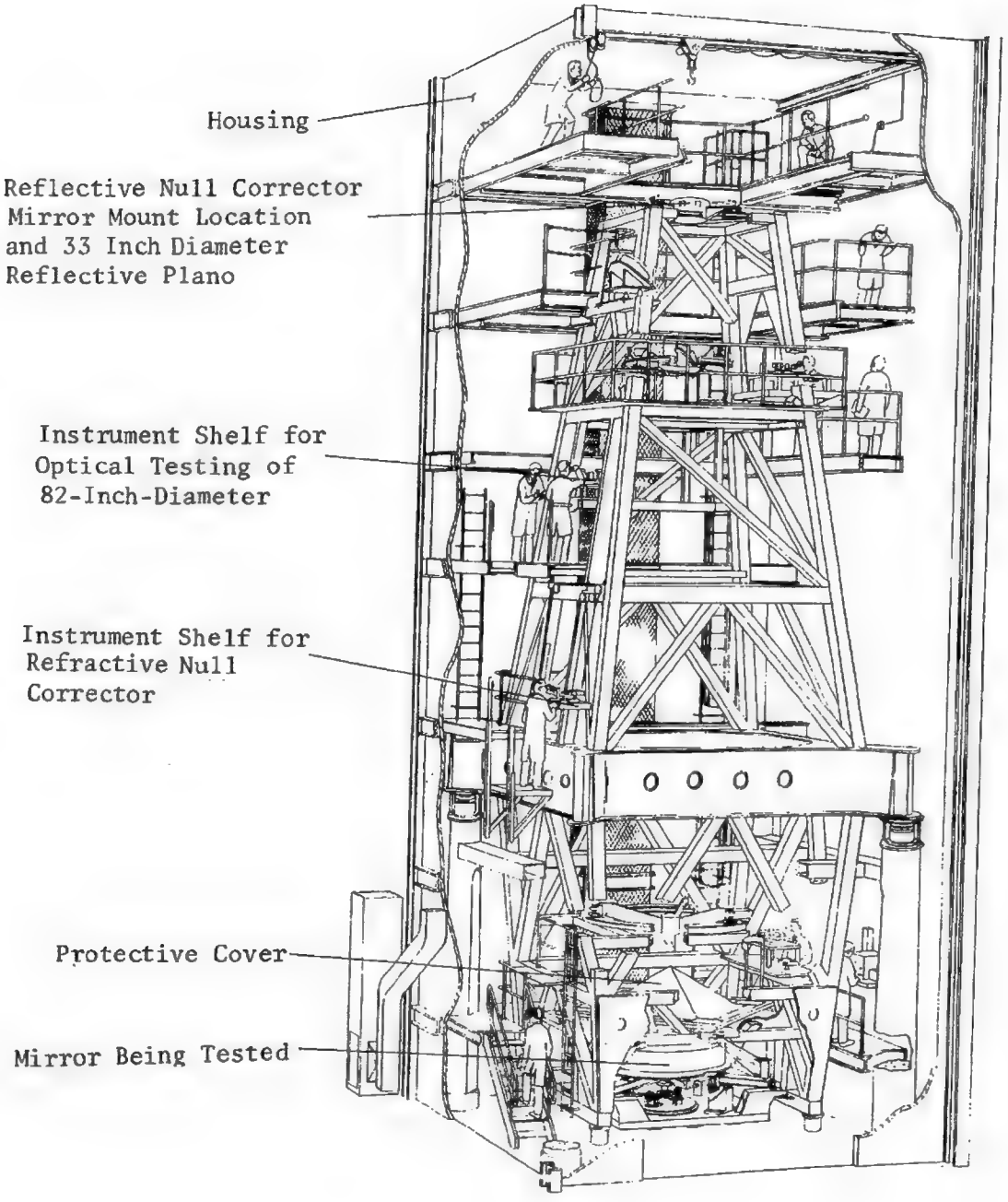
Housing
Reflective Null Corrector Mirror Mount Location and 33 Inch Diameter Reflective Plano
Instrument Shelf for Optical Testing of 82-Inch-Diameter
Instrument Shelf for Refractive Null Corrector
Protective Cover
Mirror Being Tested

Figure 6.5-2. Chamber I_{em}

Handle via BYEMAN
Control System Only

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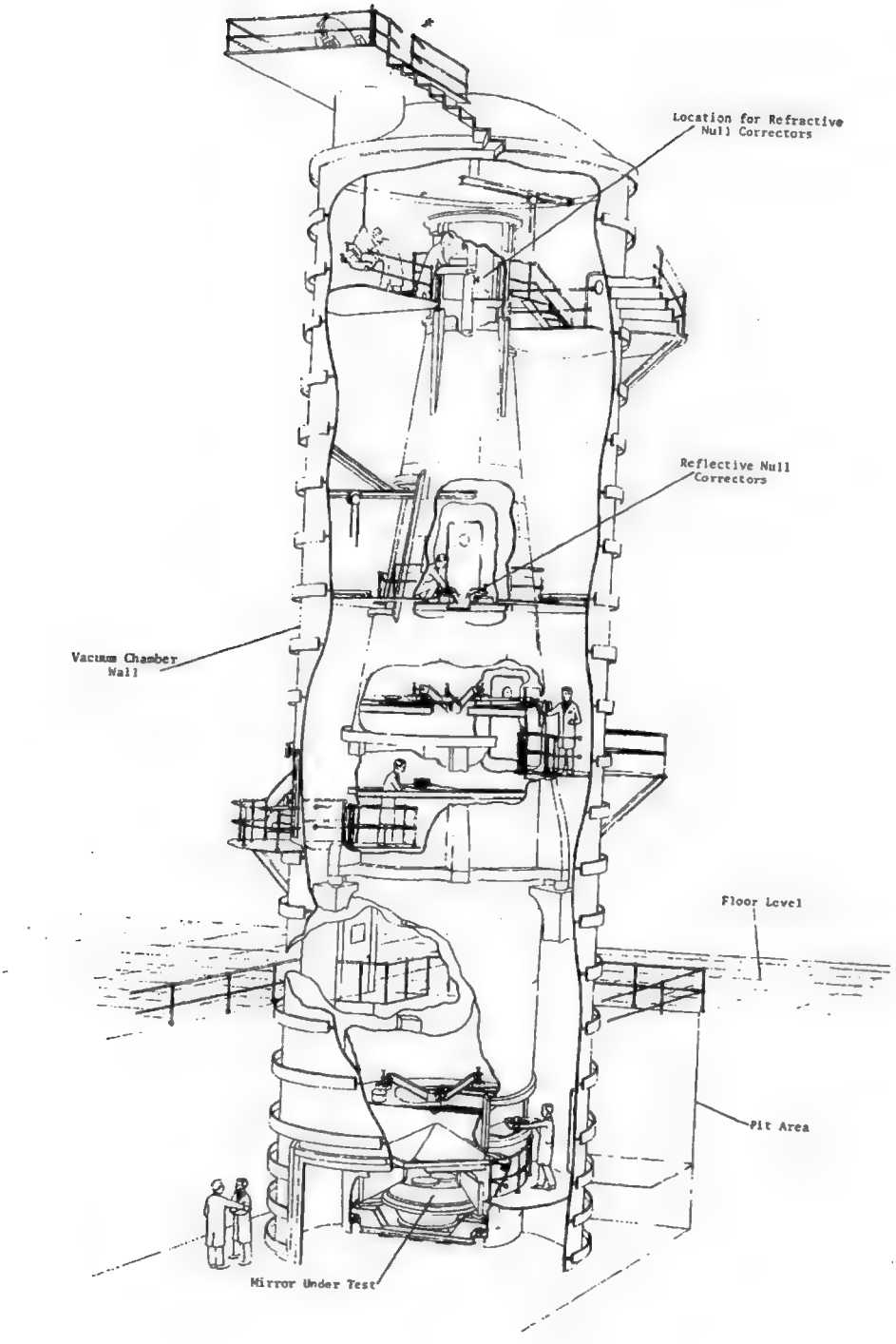

Figure 6.5-3. Chamber I

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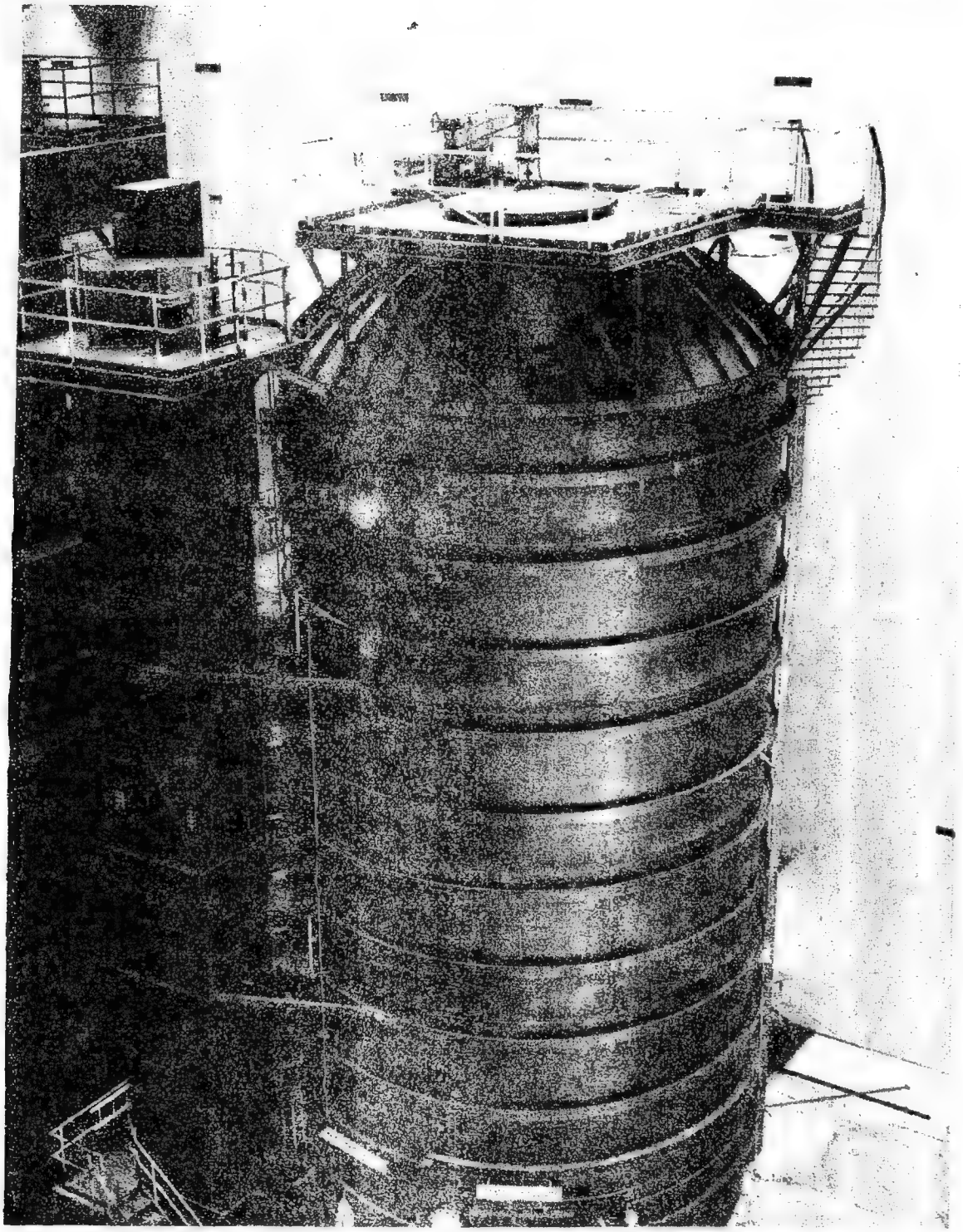

Figure 6.5-4a. Chamber I

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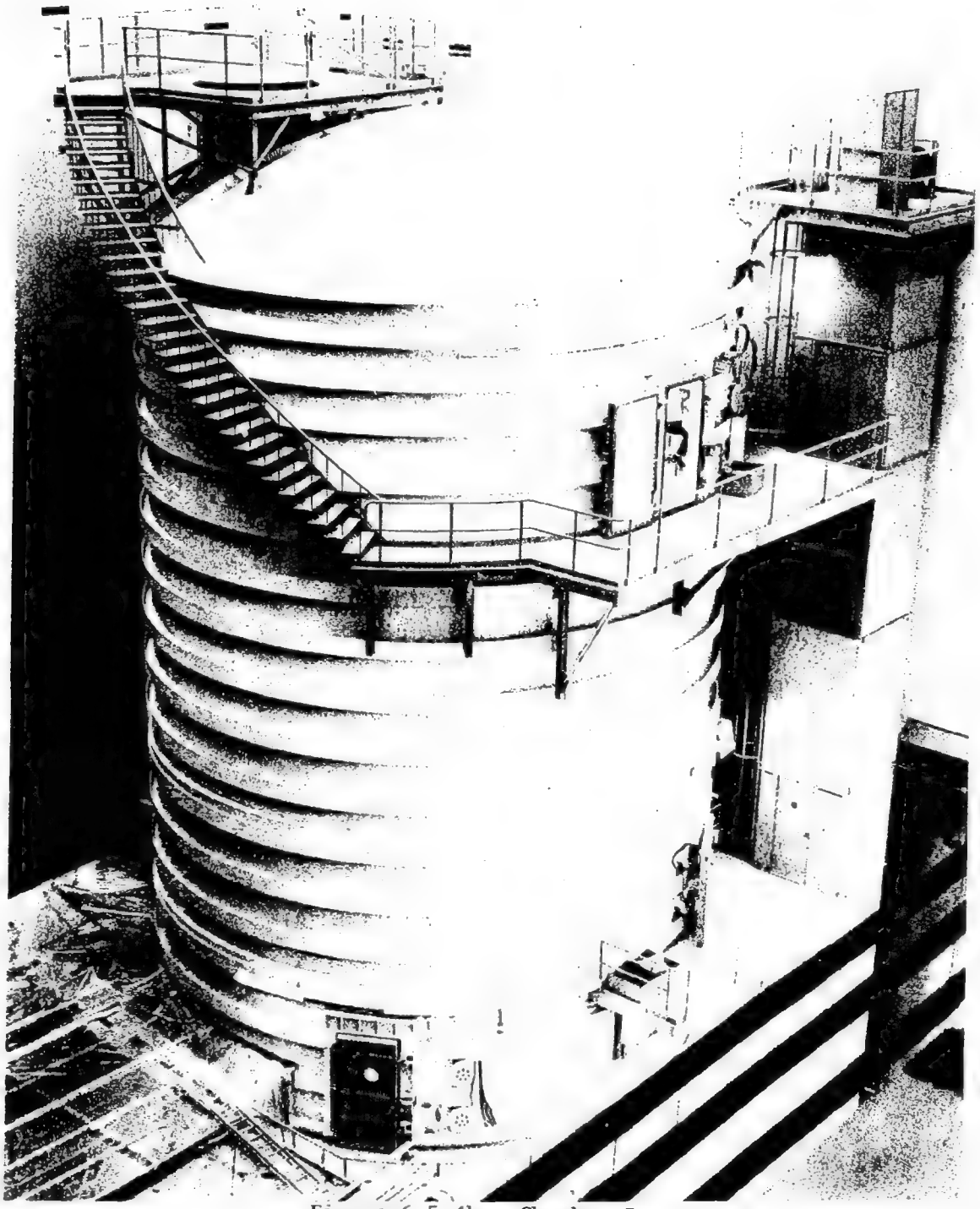

Figure 6.5-4b. Chamber Ig

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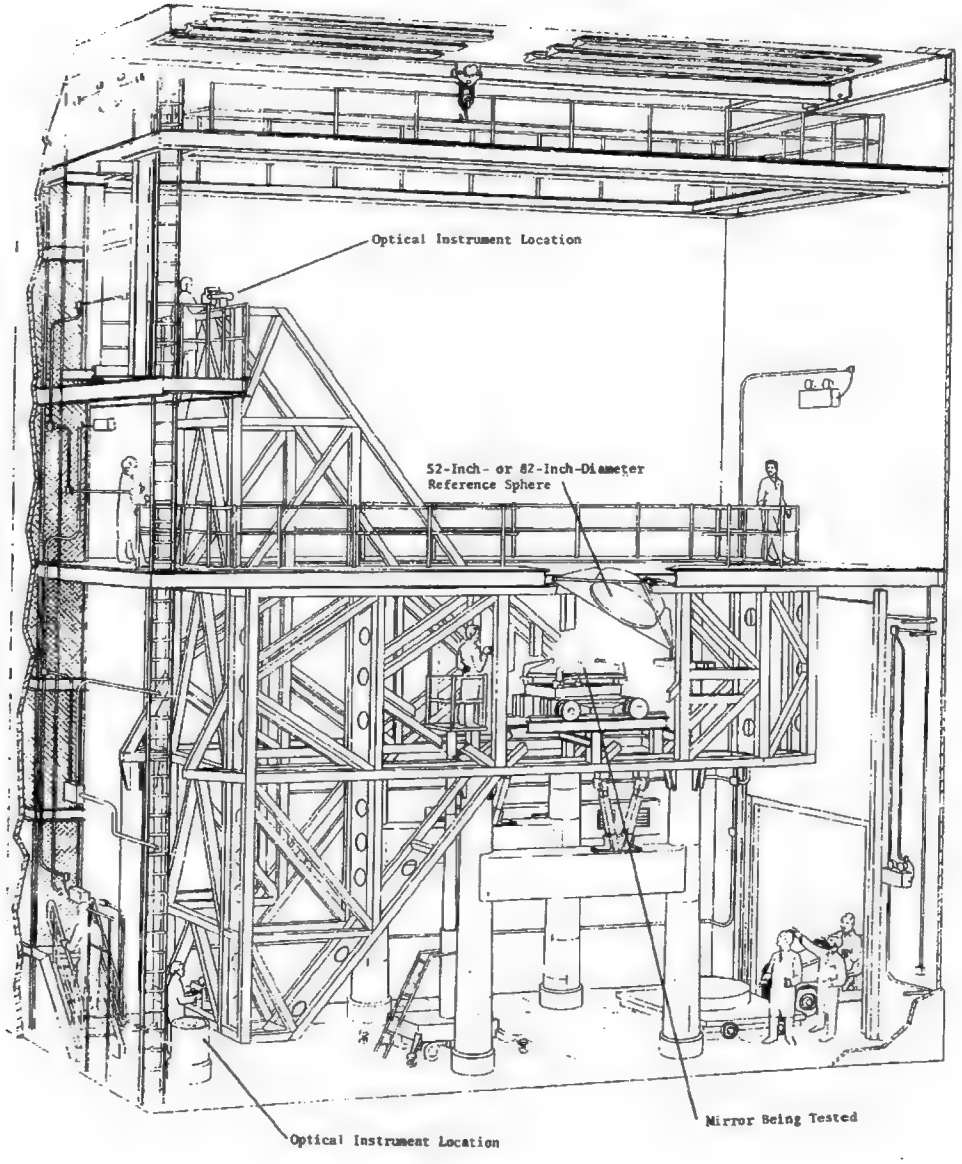

Figure 6.5-5. Chamber II_{em}

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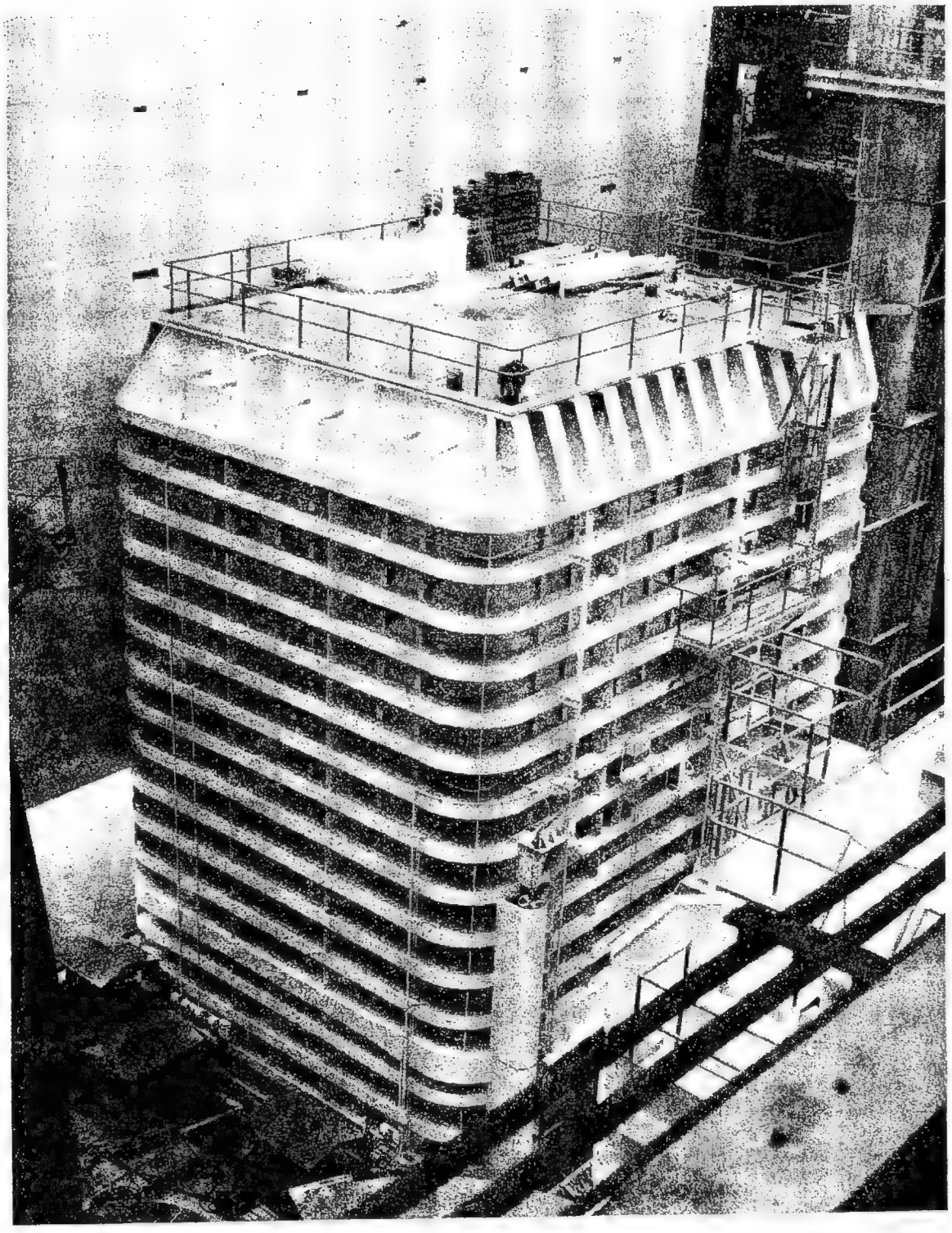

Figure 6.5-6. Chamber IIg

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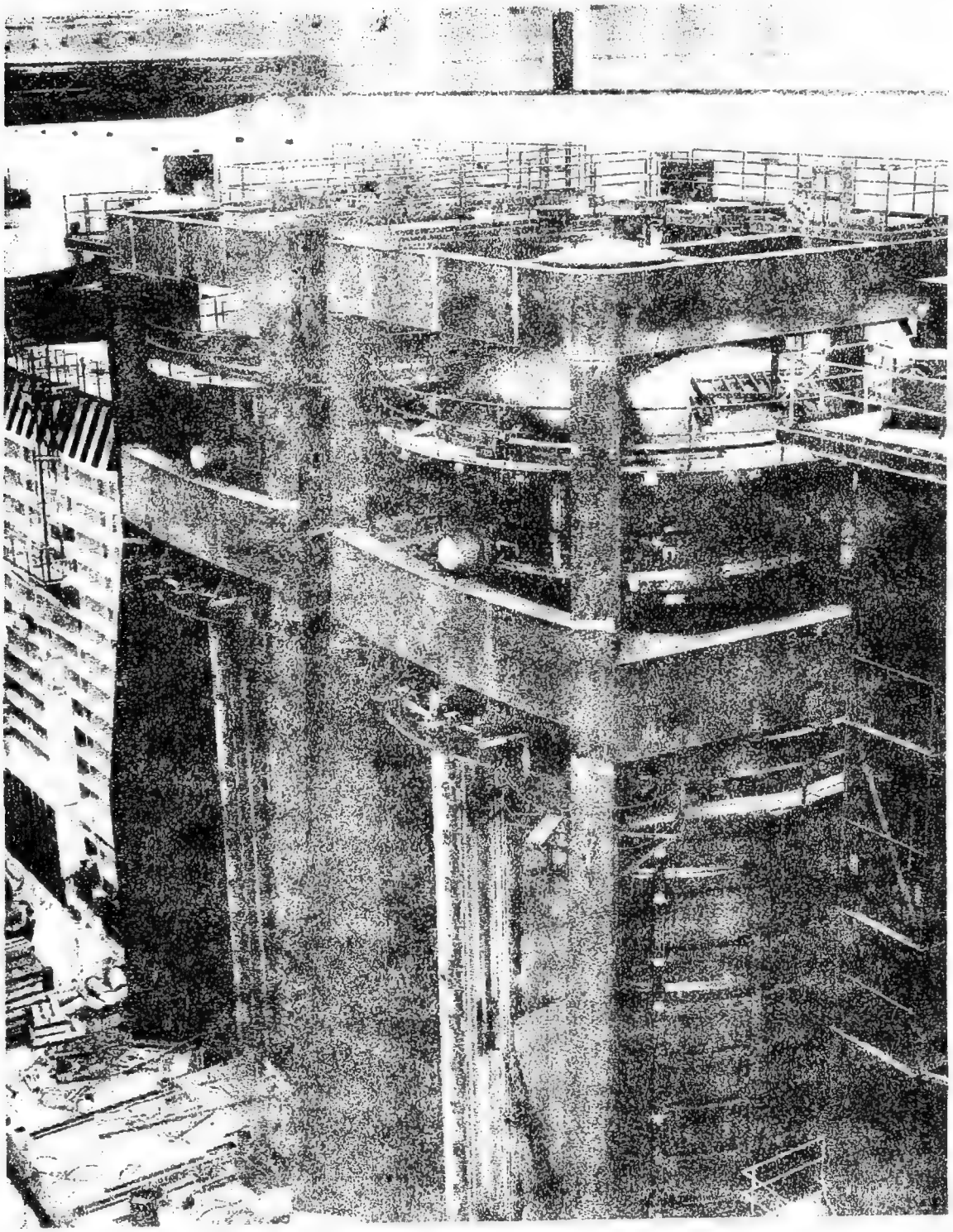

Figure 6 C-7. Chambers IIIa and b

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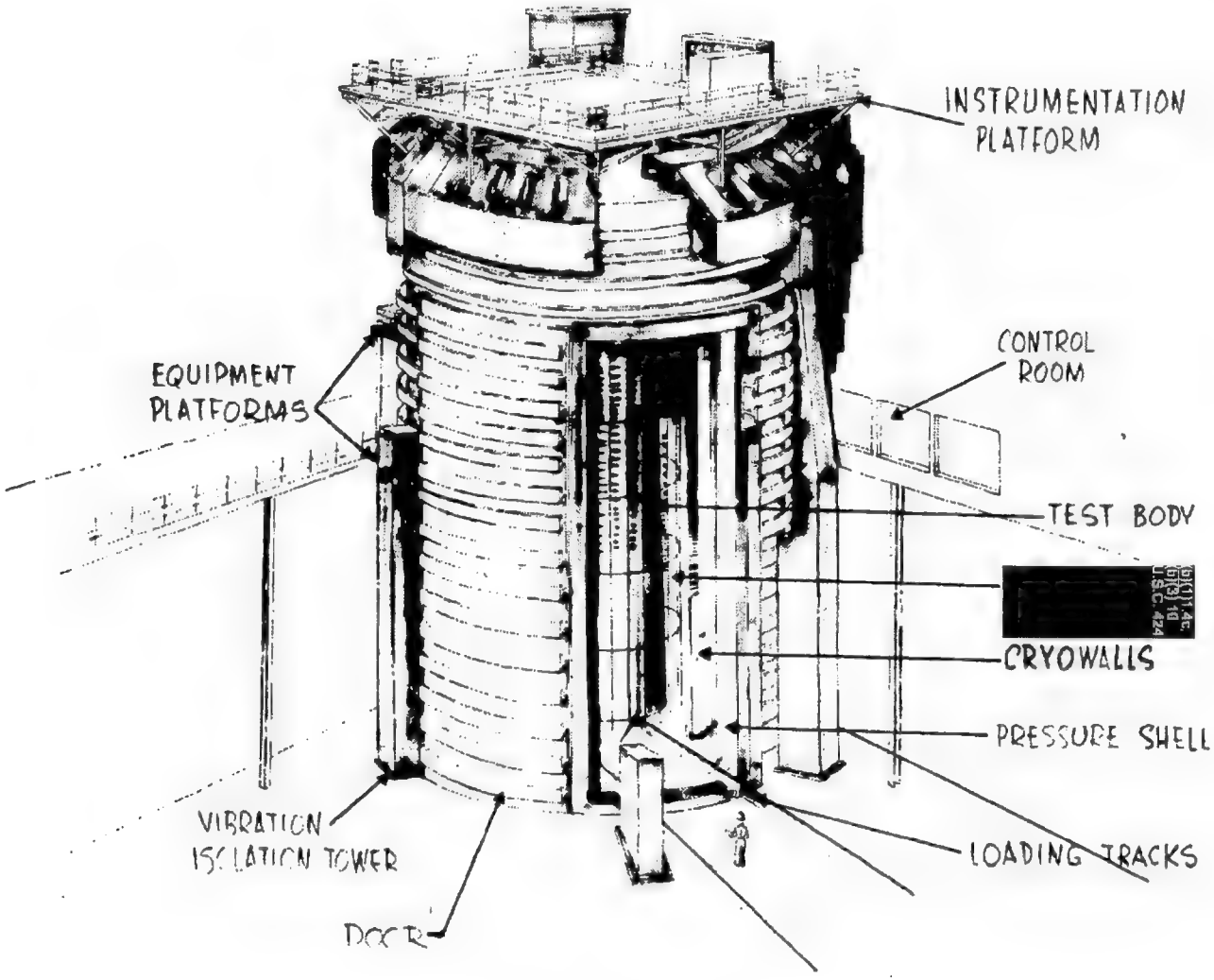

Figure 6.5-8. Chamber A

Handle via BYEMAN
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Figure 6.5-9. Chamber A

Handle via BYEMAN
Control System Only

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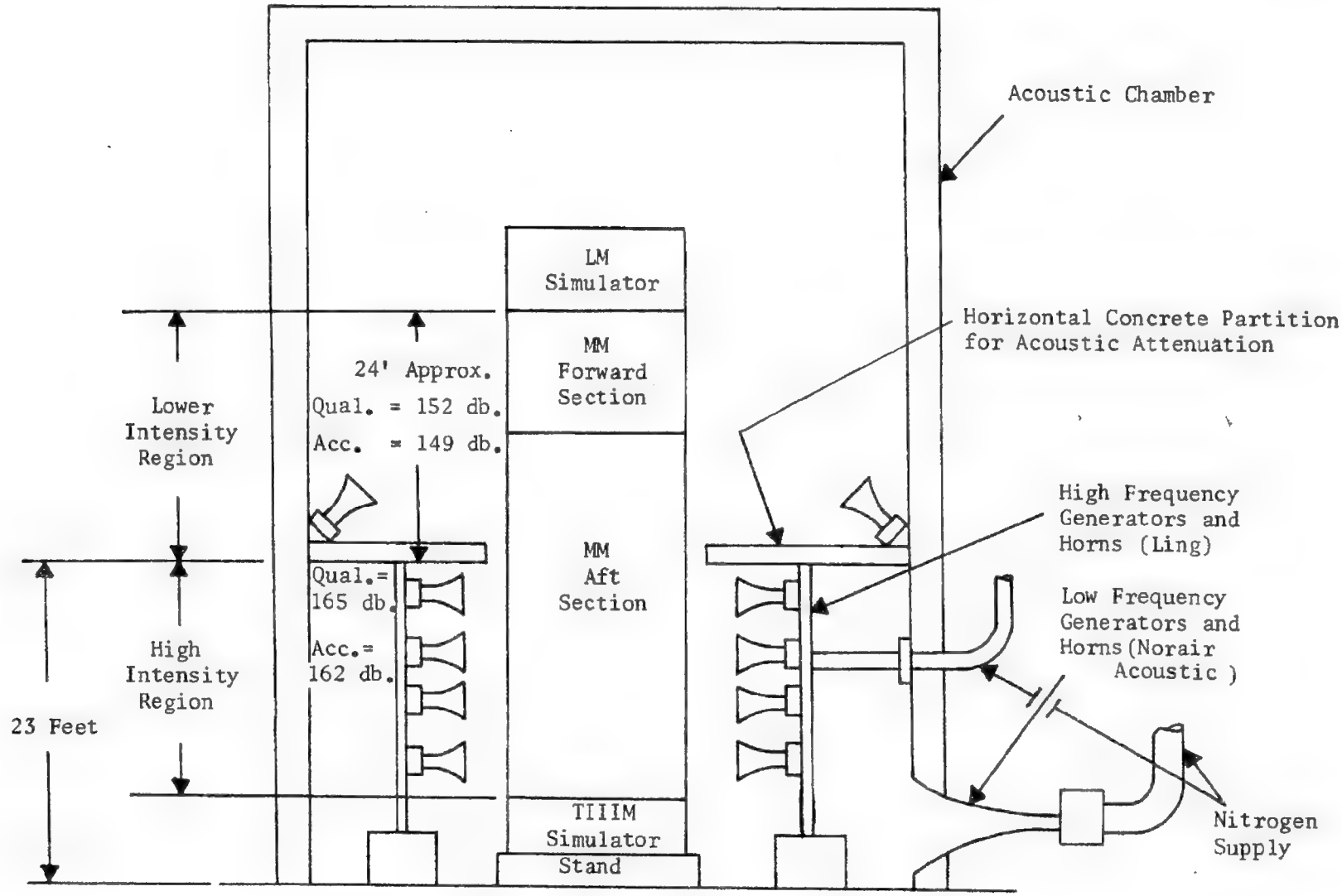

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Figure 6.5-10. MM Acoustic Vibration Test Configuration

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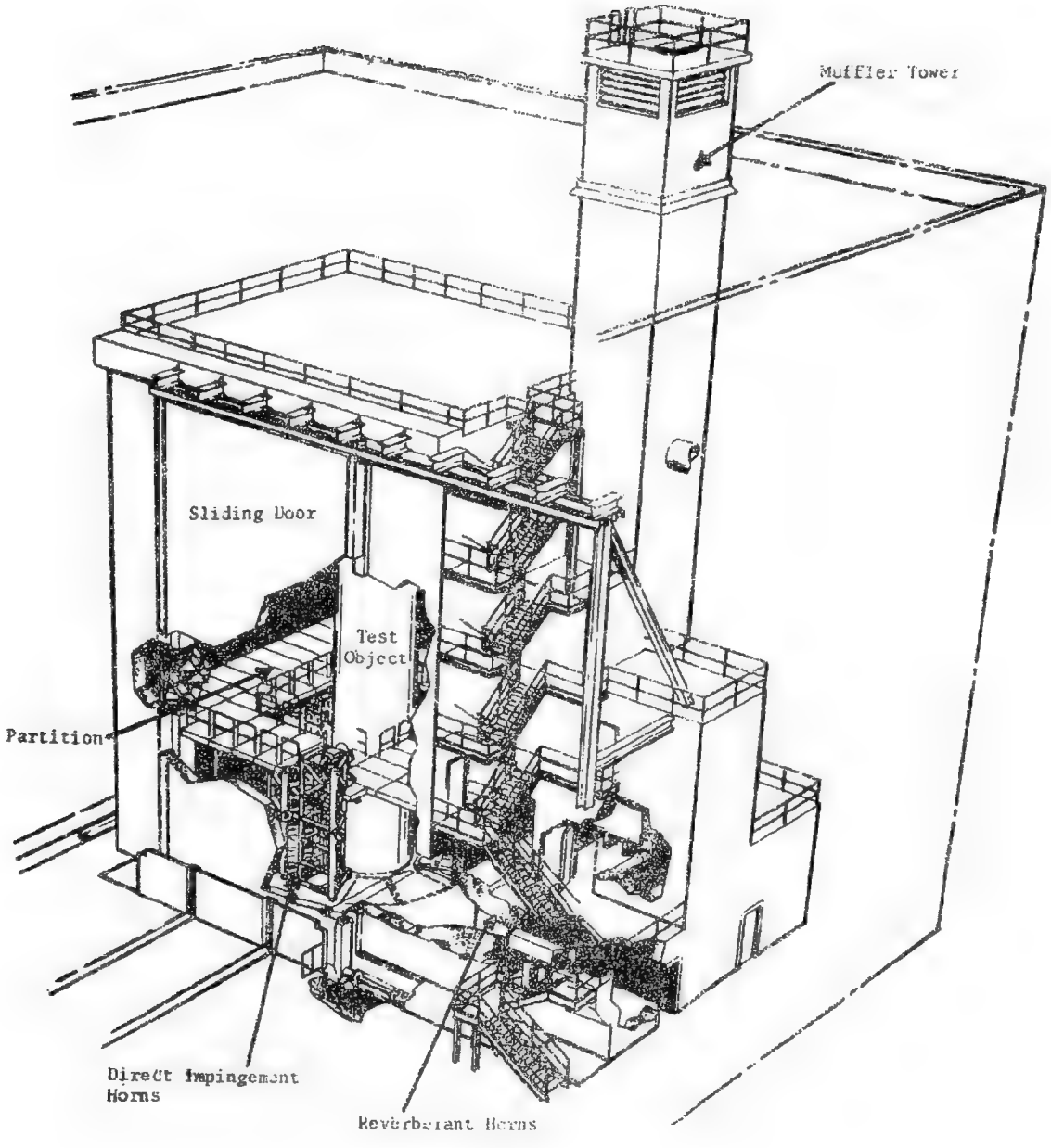

Figure 6.5-11. Acoustic Test Chamber

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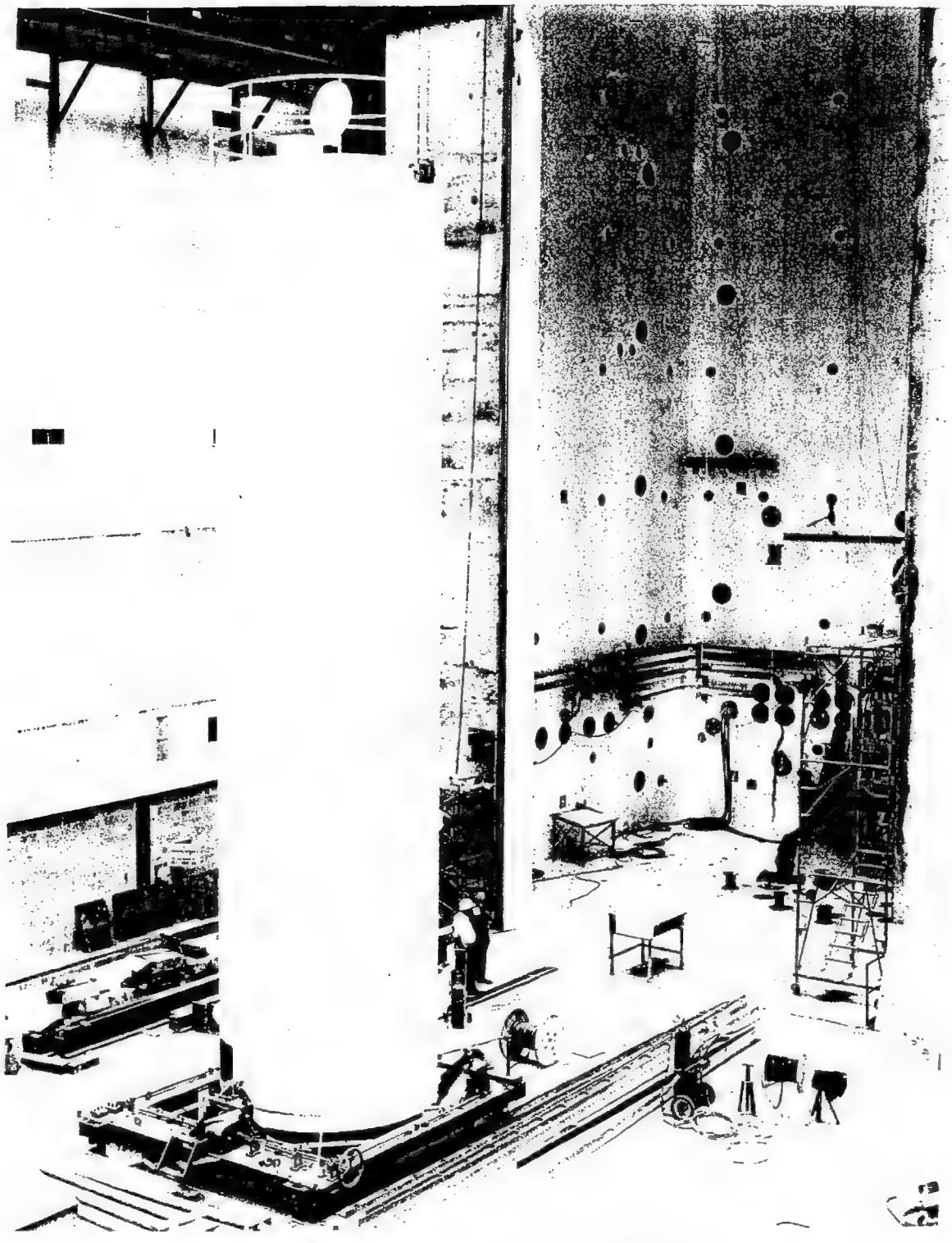

Figure 6.5-12. Acoustic Test Facility

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Control System Only

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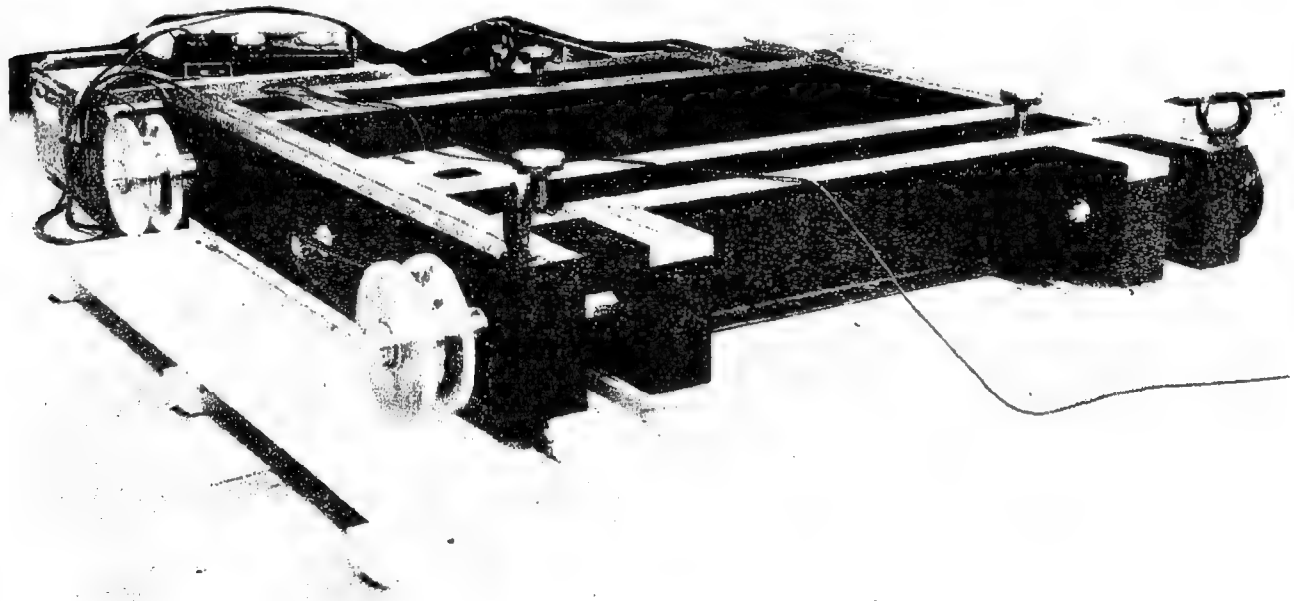

Figure 6.6-1. Positioner Dolly, Chamber II_{EM}

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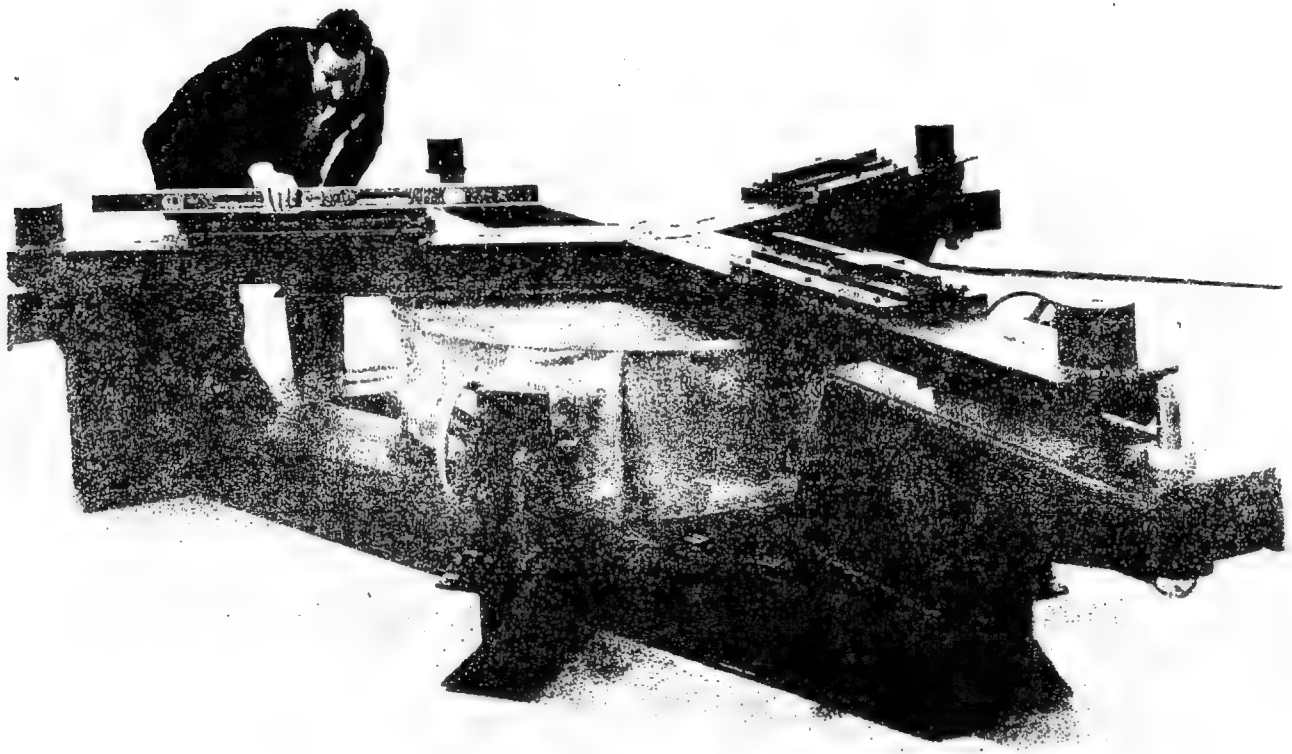

Figure 6.6-2. Upright Adjustable Mirror Support, Chamber I_{EM}

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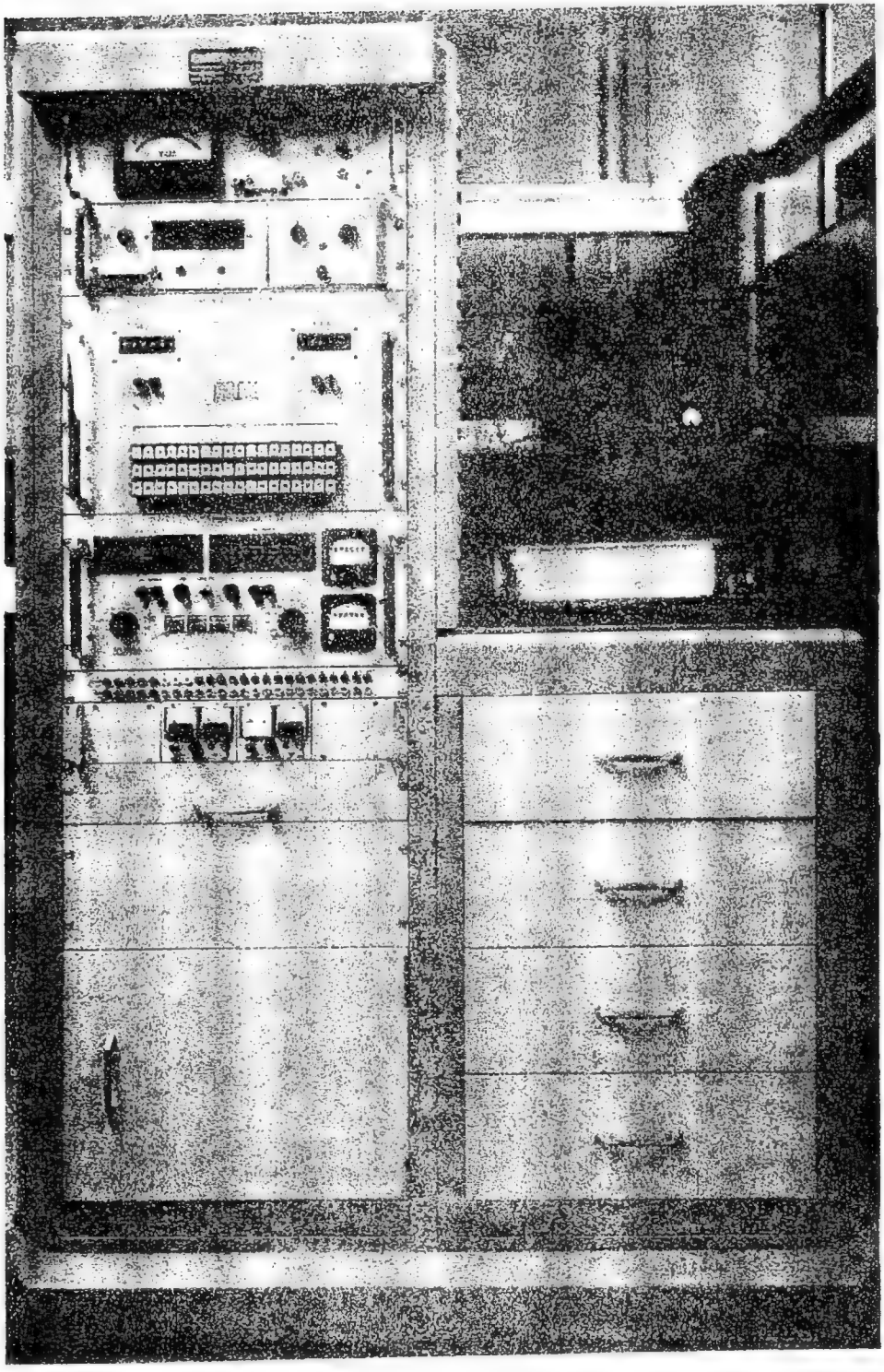

Figure 6.6-3. Instrumentation Processor Test Set
Front Panel View

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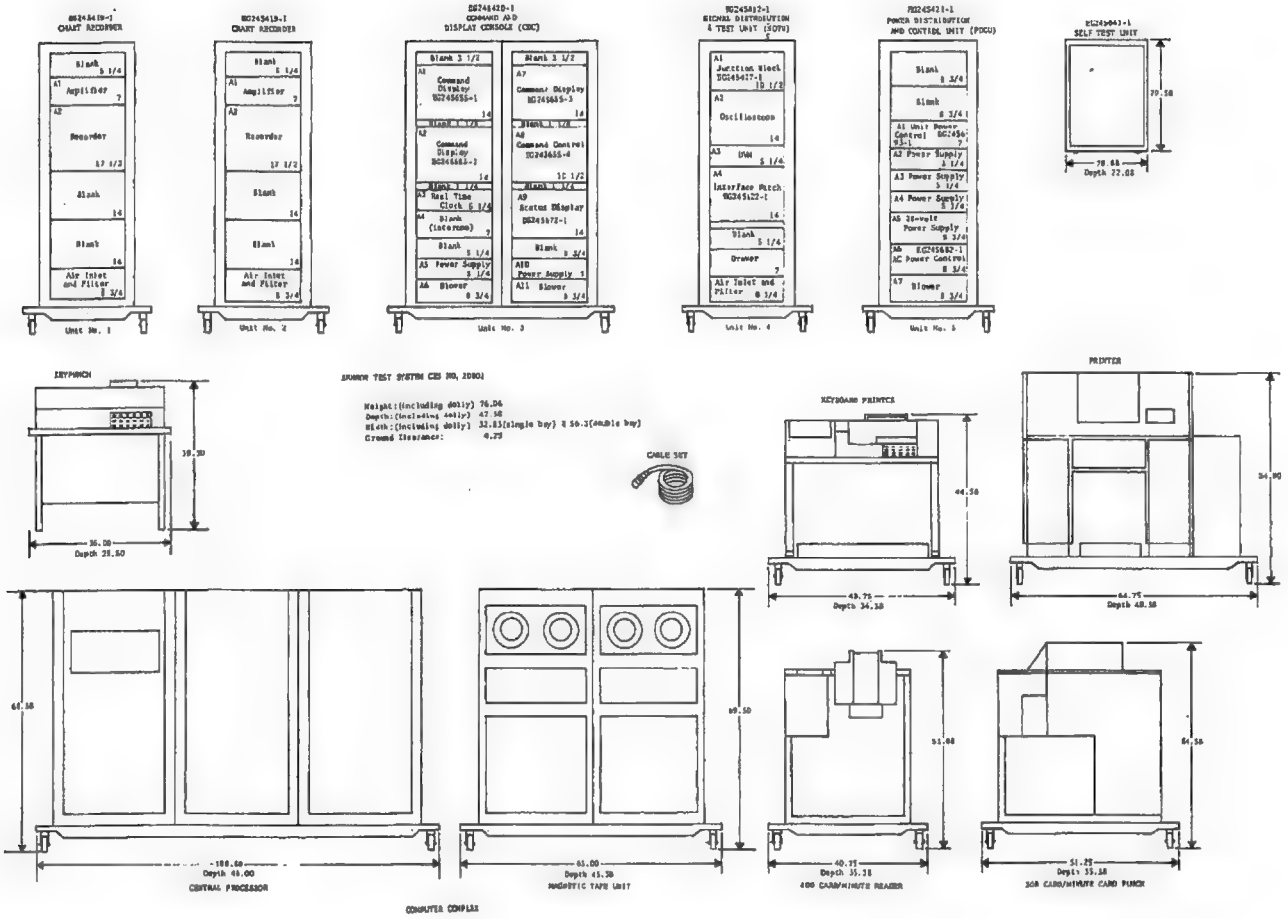

6-111

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Figure 6.6-4. Layout Drawing of Sensor Test System

SECRET D

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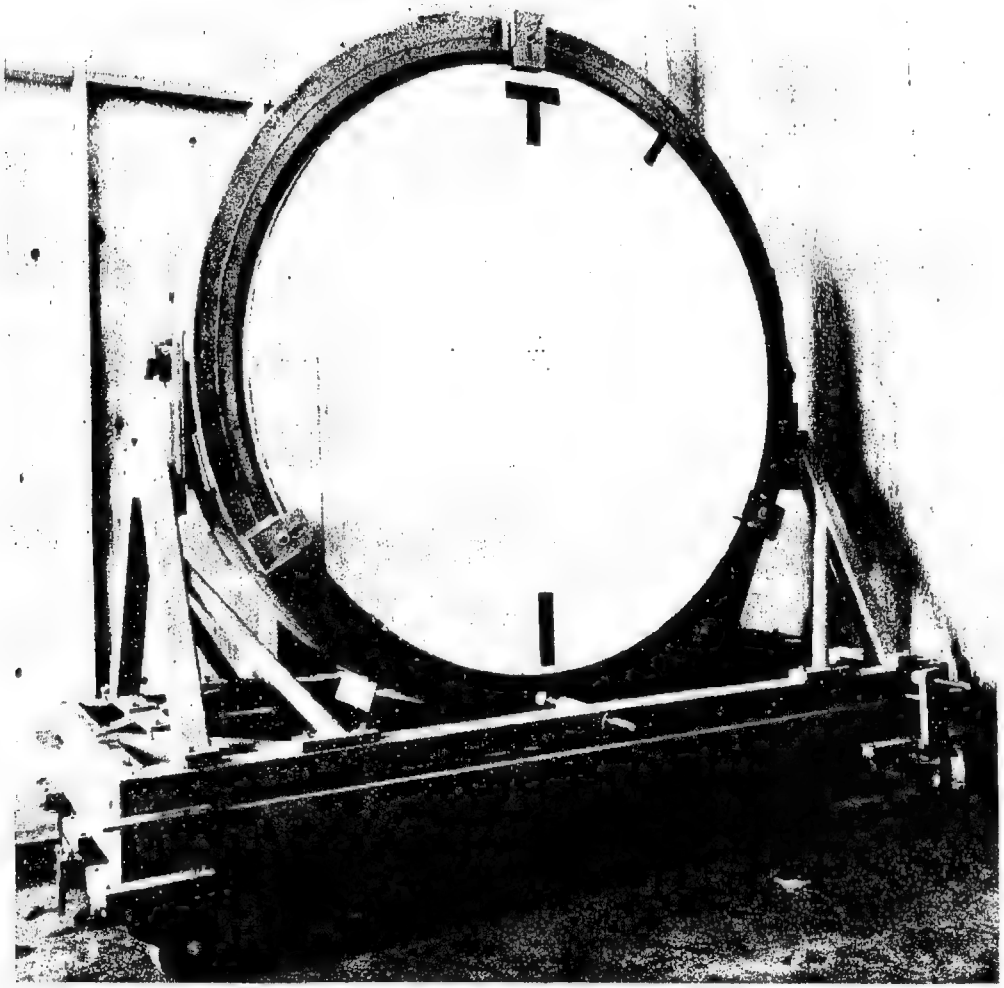

Figure 6.6-6. Horizontal Test Stand Setup

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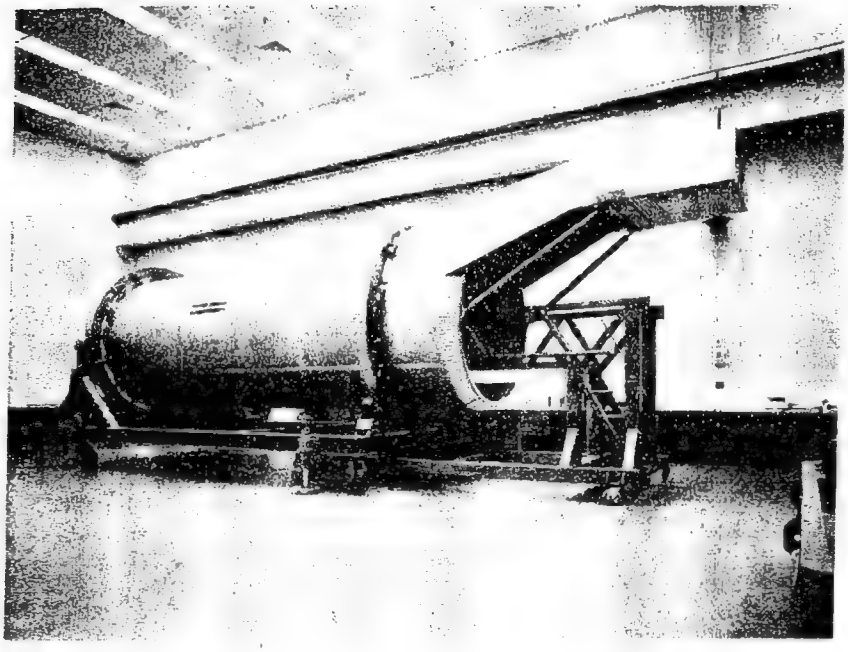

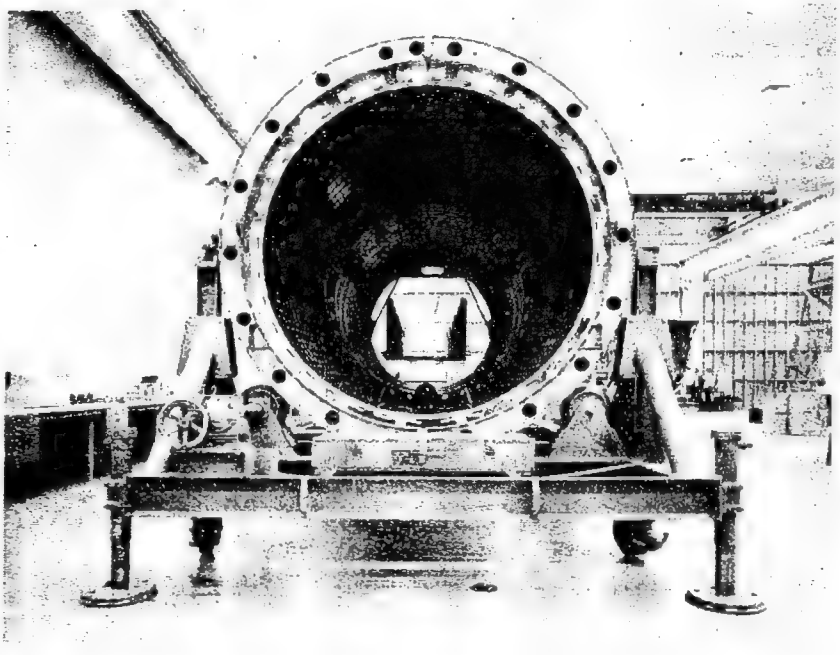

Figure 6.6-7. Checkout Cradle and Cantilever Catwalk (With SDM Aft Structure)

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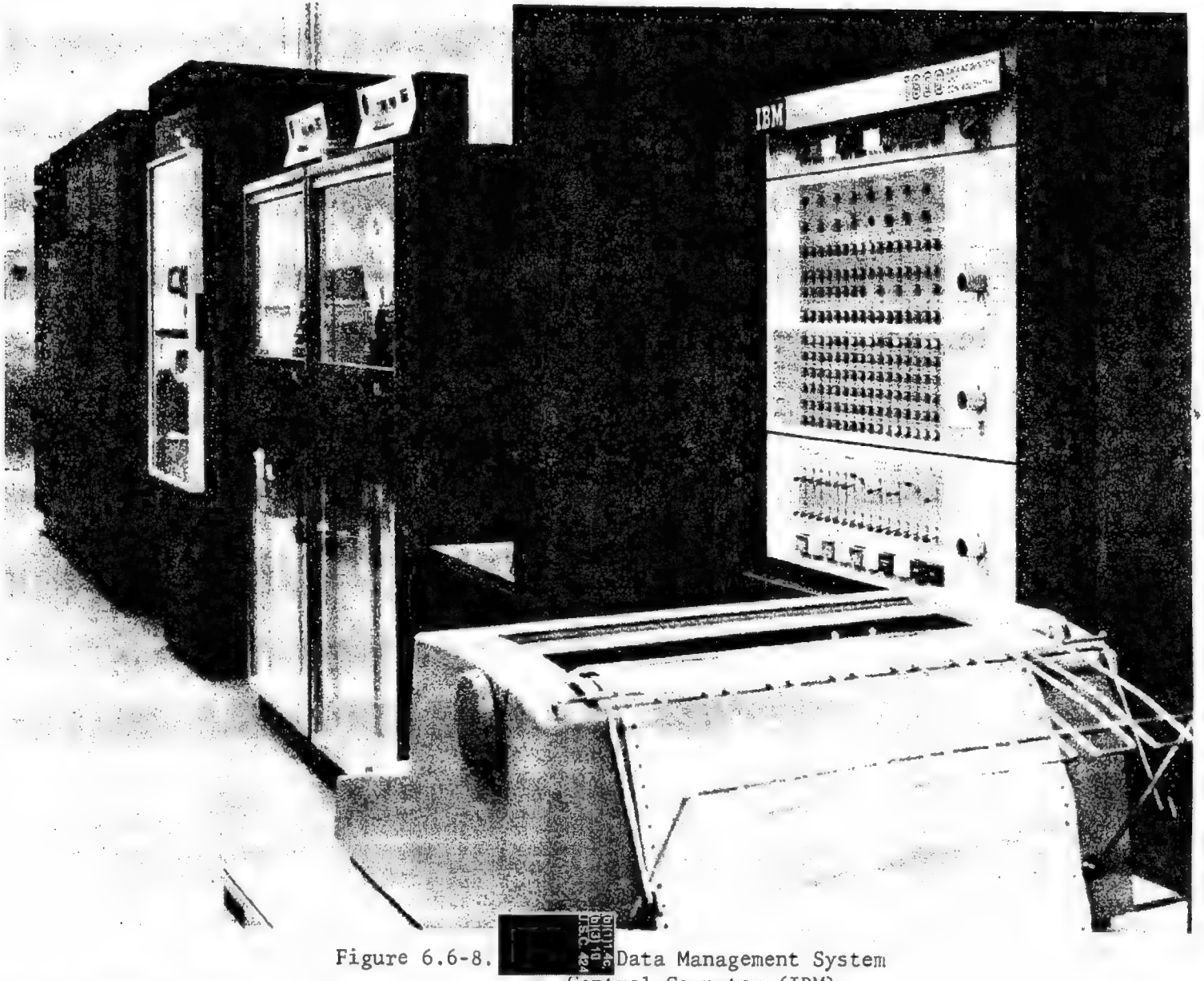

Figure 6.6-8. Data Management System Central Computer (IBM)

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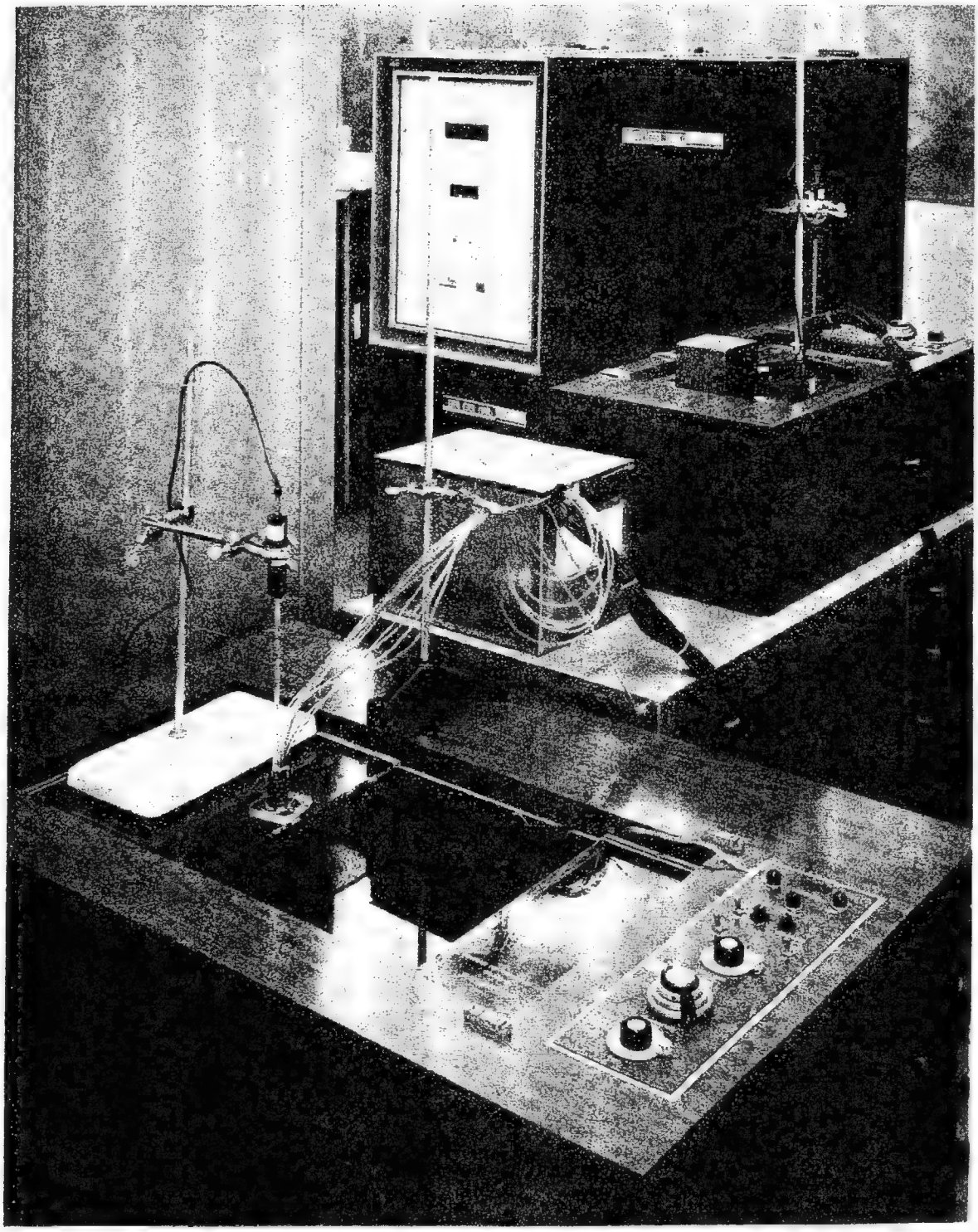

Figure 6.6-9. (b)(1)1.4c, (b)(3) 10 U.S.C. 424 Data Acquisition Equipment Breadboard (Systems Engineering Laboratories), Shown Being applied in Thermocouple Calibration.

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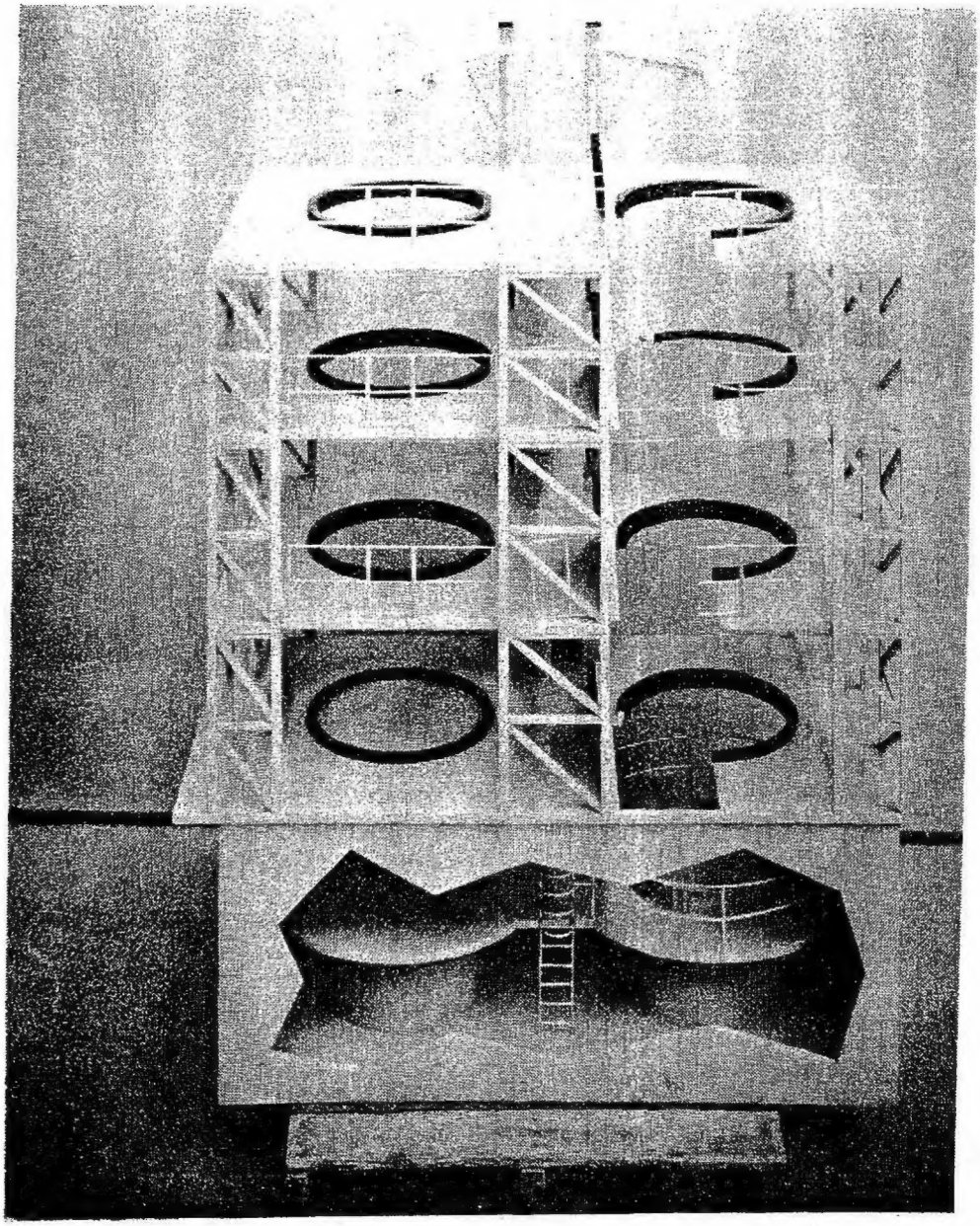

Figure 6.6-10. Mission Module Assembly Stand Scale Model

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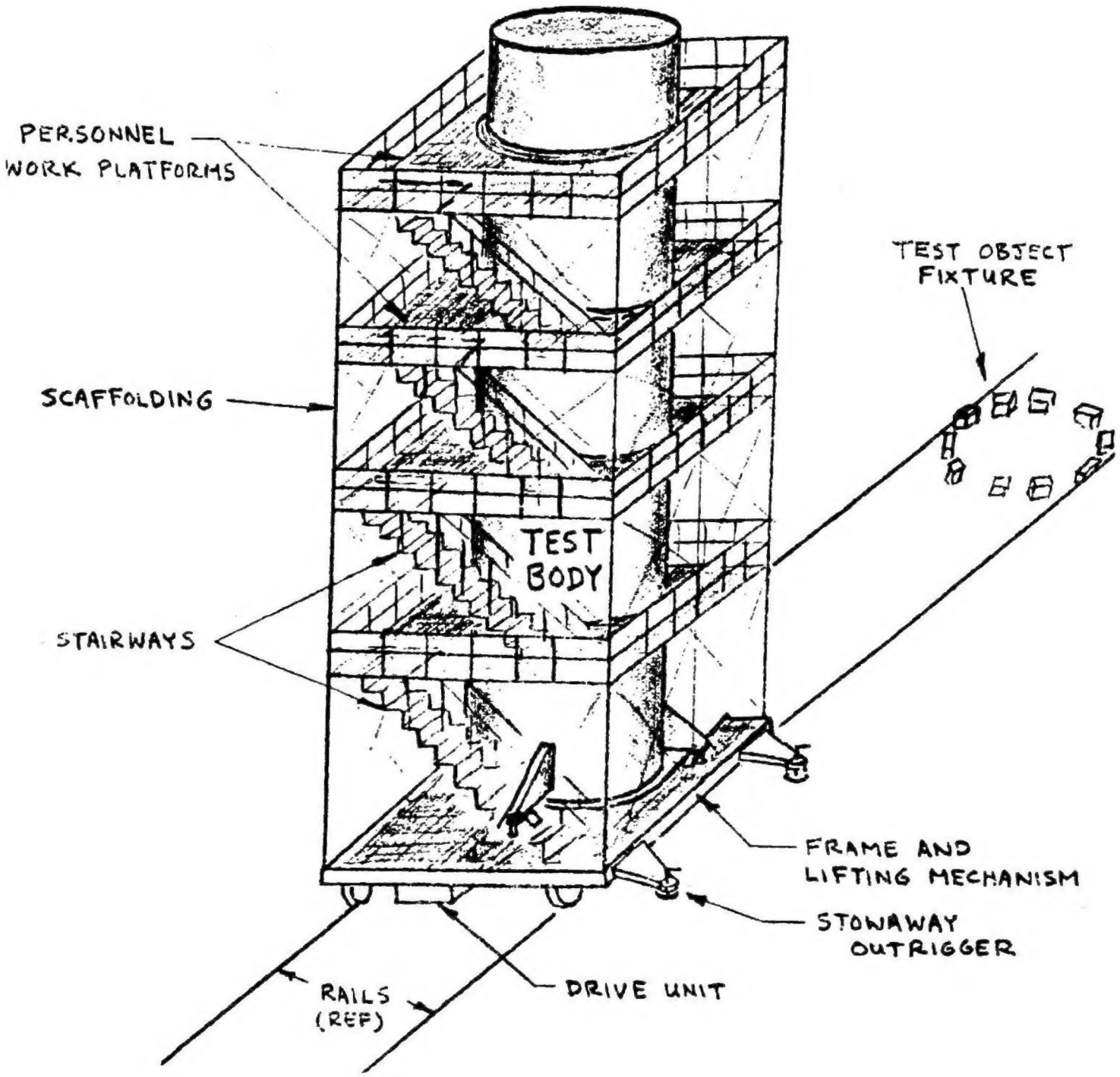

Figure 6.6-11. Test Body Transporter and Scaffolding Unit

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α_o - magnitude of $\bar{q}_o$, and
$\hat{q}_o$ - unit vector defining the direction of $\bar{q}_o$.

The unit vector $\hat{q}_o$ is given by:

$$q_o = \begin{bmatrix} \text{Sin}\Sigma o \\ -\text{cos}\Sigma o\text{Sin}\Omega o \\ \text{cos}\Sigma o\text{Cos}\Omega o \end{bmatrix} . \qquad \text{Equation A.2-1}$$

A.2.2 Vehicle Coordinate System (VCS)

The VCS is defined in Figure A.2-2.

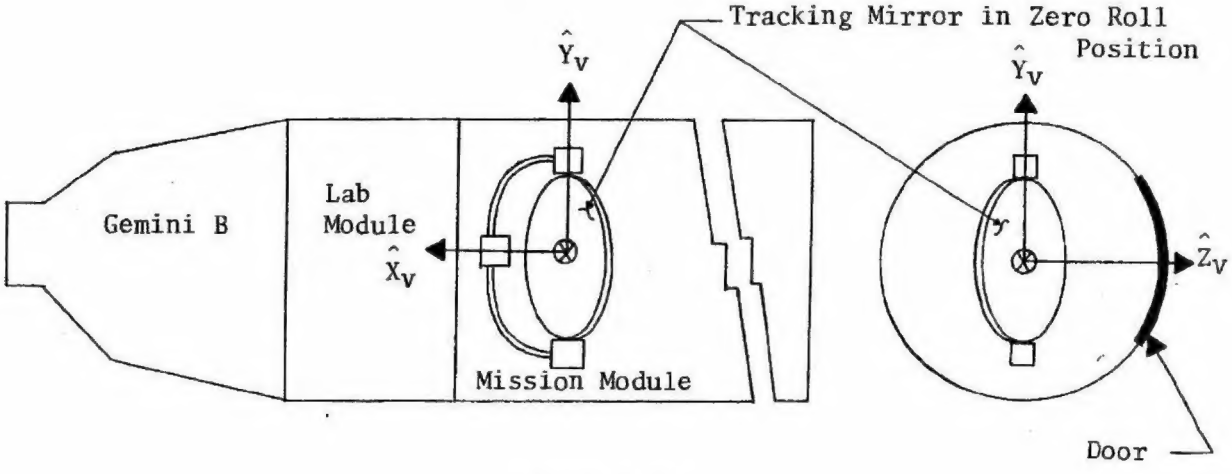

Figure A.2-2
Vehicle Coordinate System

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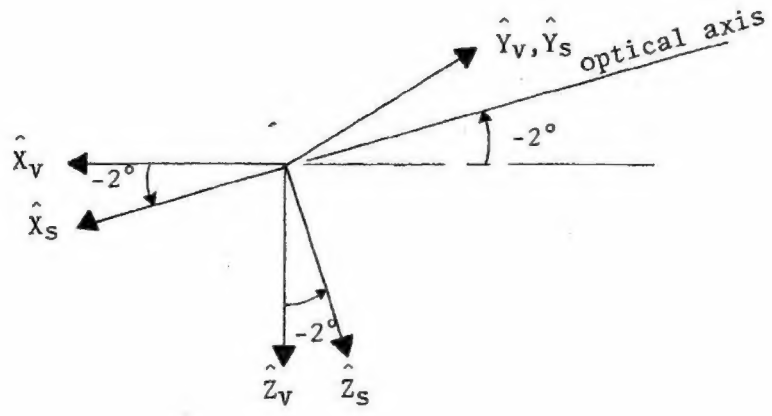

Figure A.2-3
Optical Sensor Coordinate System

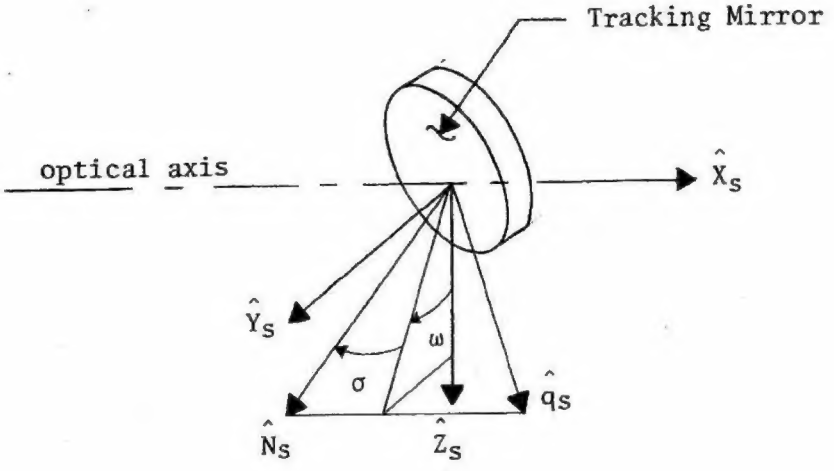

Figure A.2-4
Tracking Mirror Gimbal Angles

Handle via BYEMAN
Control System Only